



Project Team

Congestion Relief & Bus Rapid Transit Projects

APPENDIX T5

NORTHWEST REGION

ILLUMINATION AND SIGNAL DETAILS

**I-405, SR520 to SR522 Stage 1
(Kirkland Stage 1)**

Draft RFP
March 22, 2005



**Washington State
Department of Transportation**

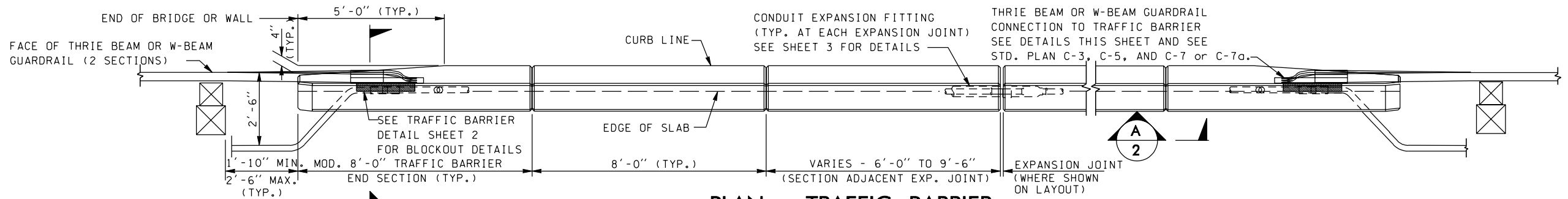
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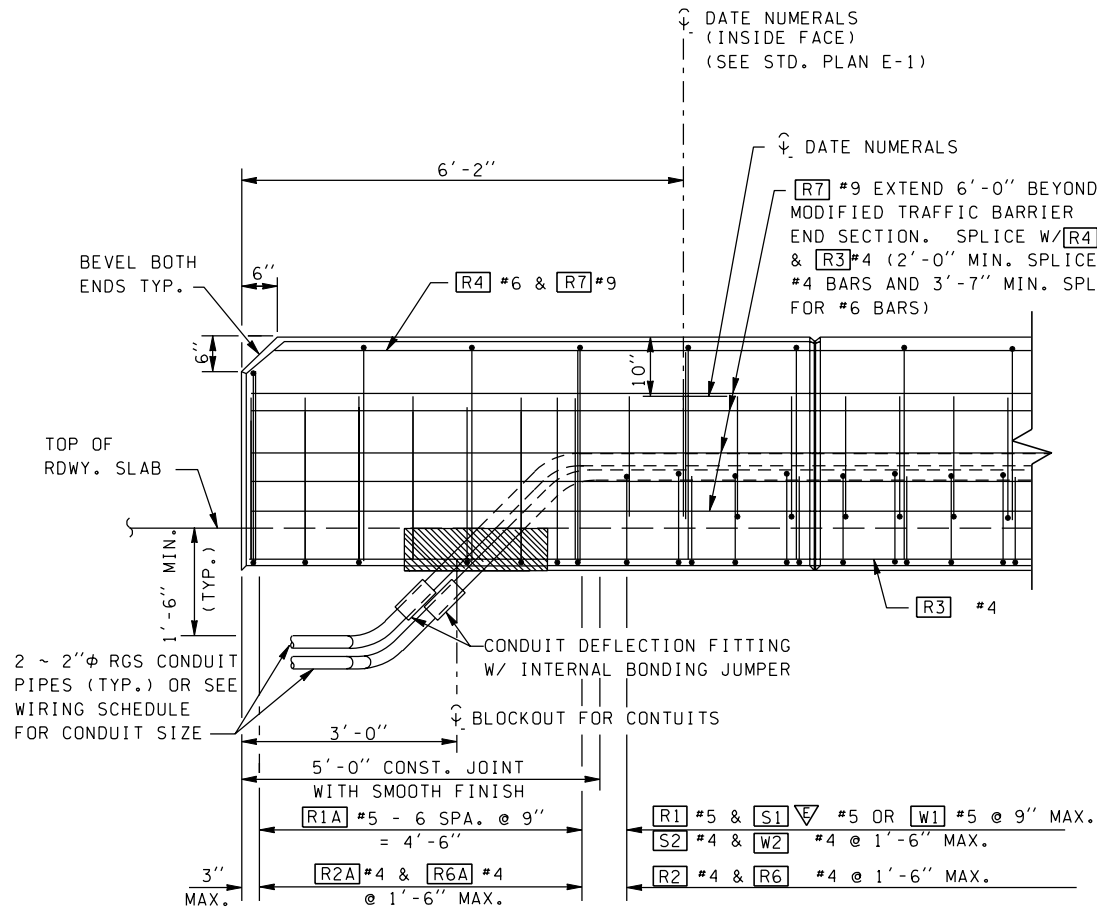
06/18/2002

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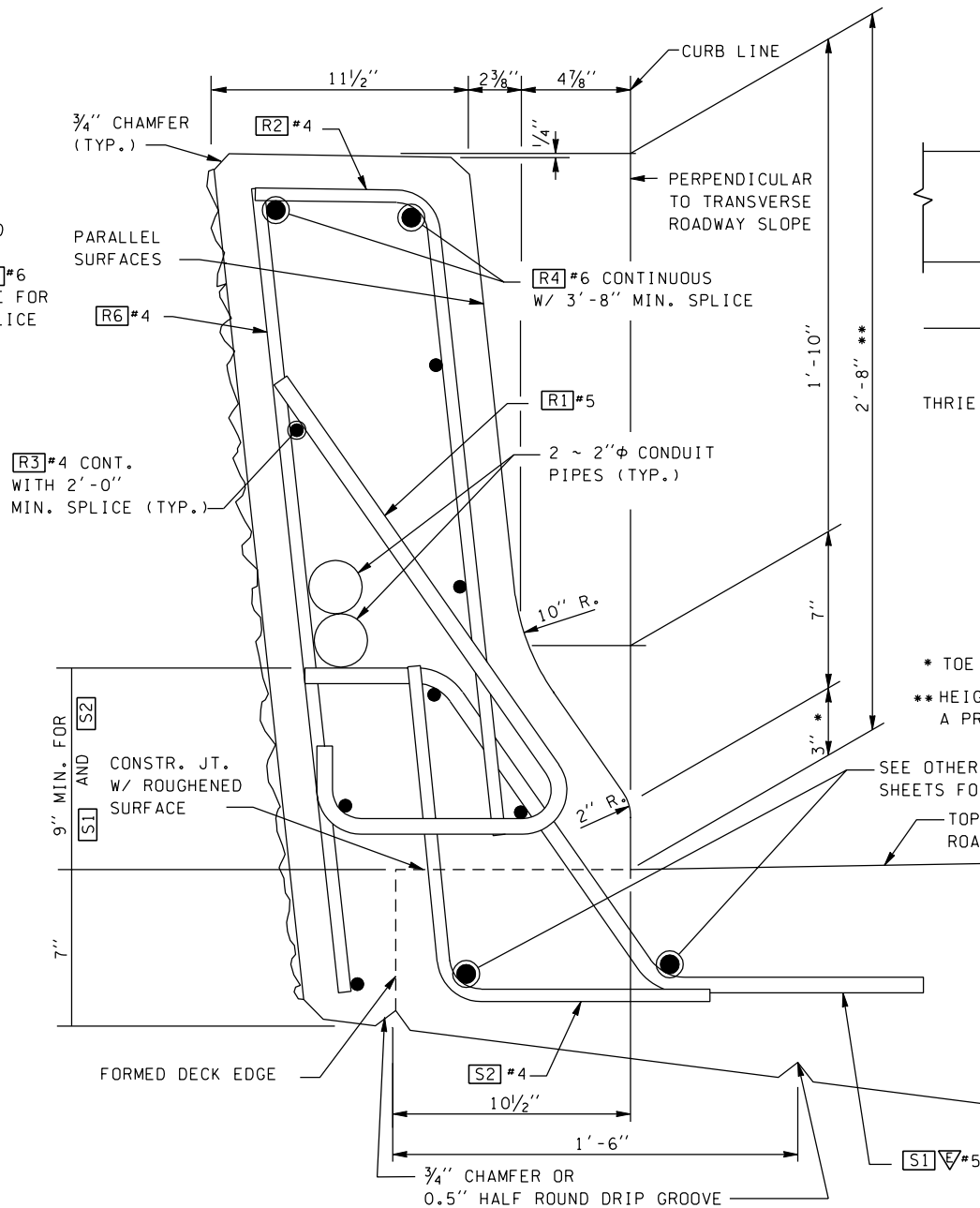
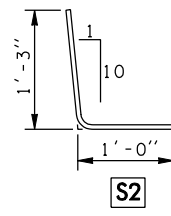
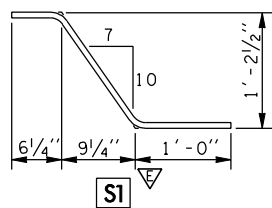


PLAN - TRAFFIC BARRIER

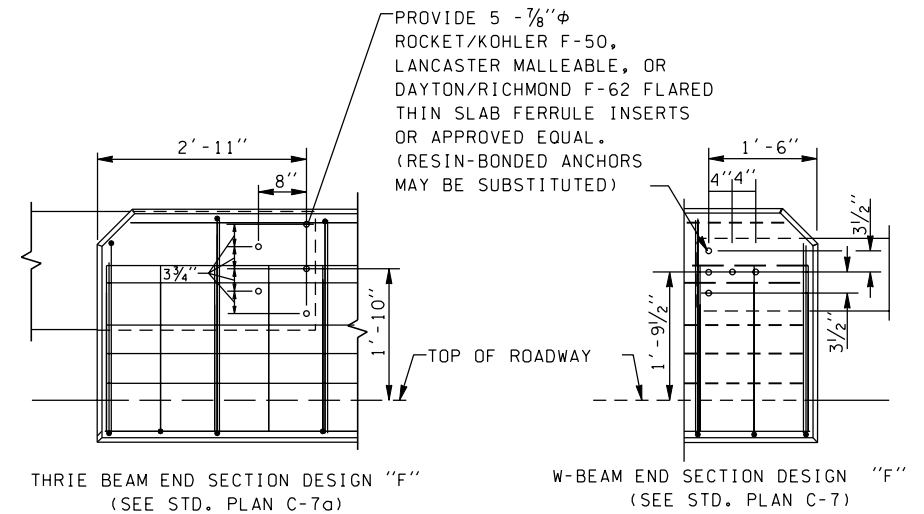
BARRIER CONTINUOUS BETWEEN ROADWAY EXPANSION JOINTS.
CONSTRUCTION JOINTS WITH SHEAR KEYS ARE PERMISSIBLE AT DUMMY JOINT LOCATIONS.
FORM JOINTS BETWEEN DUMMY JOINTS SHALL NOT BE PERMITTED.



OUTSIDE ELEVATION END OF MODIFIED TRAFFIC BARRIER



TYPICAL SECTION - TRAFFIC BARRIER



OUTSIDE ELEVATION TRAFFIC BARRIER GUARDRAIL CONNECTION

(WHERE SHOWN ON LAYOUT)

* TOE HEIGHT MAY VARY, 2" MIN. TO 6" MAX.
** HEIGHT MAY VARY IF REQUIRED TO PROVIDE A PROFILE PLEASING TO THE EYE

SEE OTHER PLAN SHEETS FOR DETAILS
TOP OF CONCRETE ROADWAY SLAB

NW REGION:
TERMINATE EACH CONDUIT PIPE AT SEPARATE TYPE 1 JUNCTION BOXES OFF END OF BRIDGE AS SHOWN ON LAYOUT.

ALL OTHER REGIONS:
STUB OUT & CAP 3'-4" FROM END OF BRIDGE BARRIER, EXCEPT TERMINATE IN JUNCTION BOX WHERE AND WHEN SHOWN ON LAYOUT.

Note to Designer: The non-applicable text should be removed from the actual bridge plans.

				REGION NO.	STATE	FED.AID PROJ.NO.
DESIGNED BY				10	WASH	
ENTERED BY	J. HARVEY			JOB NUMBER		
CHECKED BY				CONTRACT NO.		
PROJ. ENGR.						
REGIONAL ADM.		4-4-01	NEW BARRIER SHEET	JH		
	DATE	DATE	REVISION	BY		



Washington State
Department of Transportation

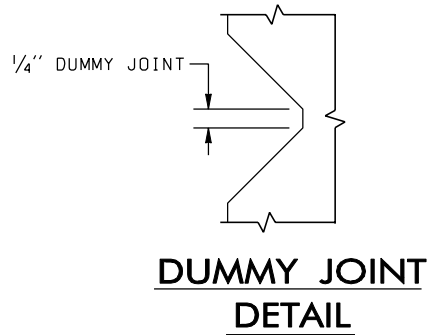
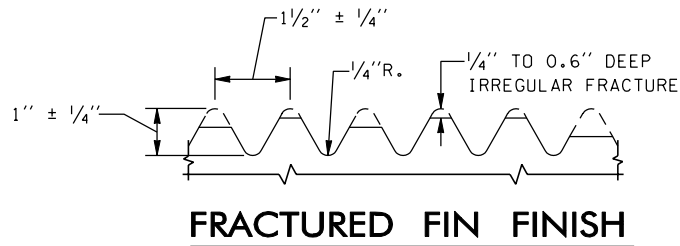
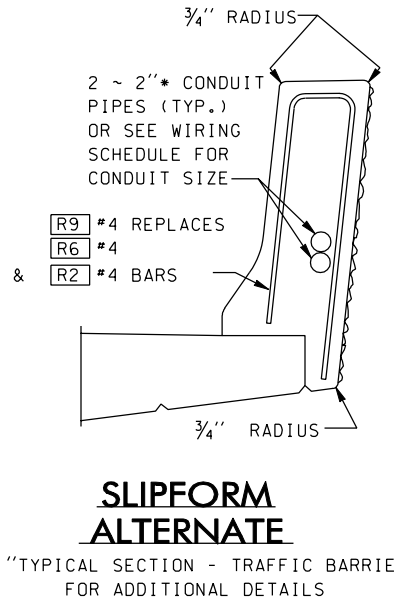
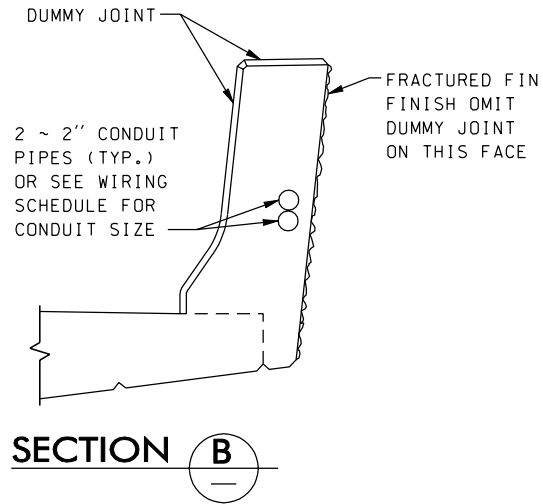
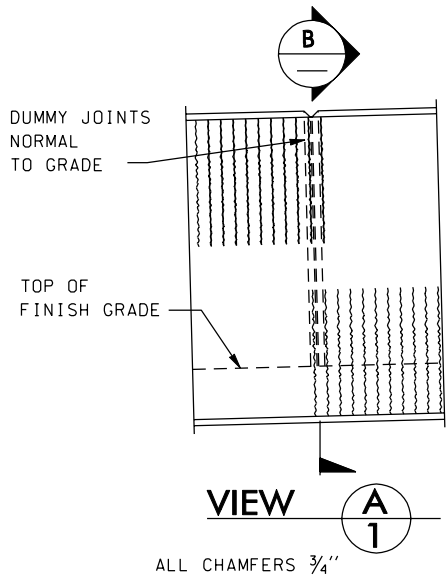
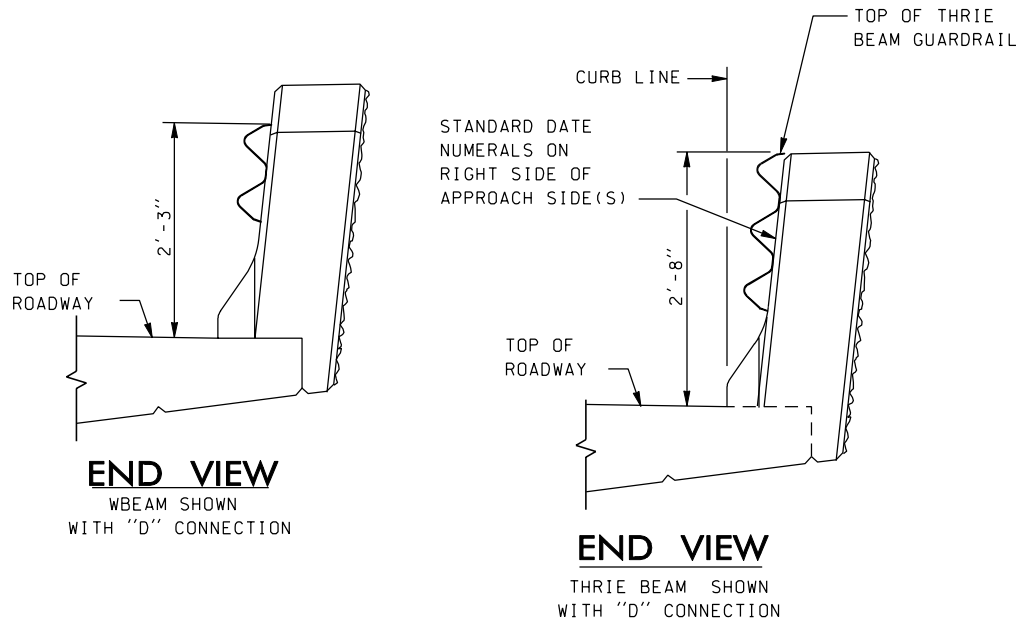
STANDARD
TRAFFIC BARRIERS
ENGLISH

1.01E

TYPE F - TRAFFIC BARRIER
DETAIL 1 OF 3

SHEET
1
OF
3
SHEETS

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JUNCTION BOX LOCATIONS	
STATION	OFFSET

TRAFFIC BARRIER BAR LIST

ALL REINFORCING SHALL BE AASHTO M31, GR. 60.

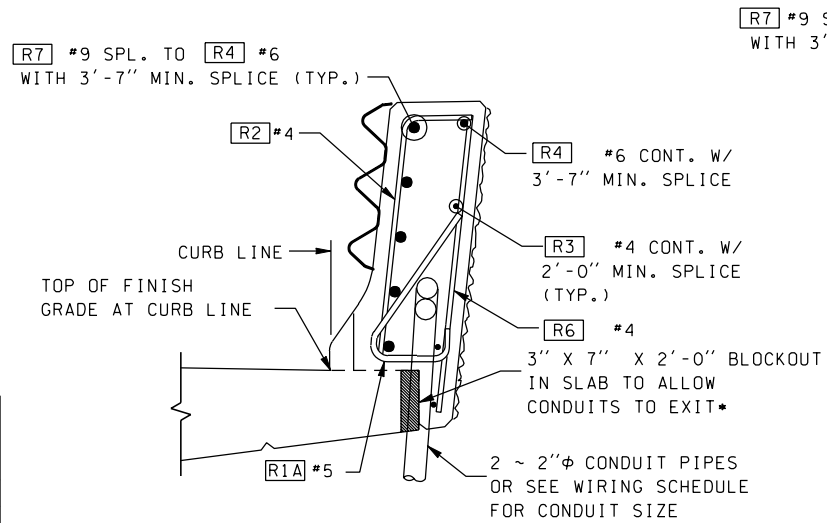
MARK	SIZE	LENGTH	BENDING DIAGRAM (ALL DIMENSIONS ARE OUT TO OUT)
R1	5	3'-8"	z DIMENSIONS TO POINTS OF INTERSECTION
R1A	5	(A)	
R2	4	2'-11"	
R2A	4	3'-5"	
R3	4	(A)	
R4	6	(A)	STR.
R6	4	3'-0"	STR.
R7	9	14'-0"	STR.
R9	4	5'-11"	

(A) DETERMINE FROM PLANS

FOR [W1] & [W2] BARS SEE WINGWALL OR RETAINING WALL PLANS.

FOR [S1] & [S2] BARS SEE BARLIST

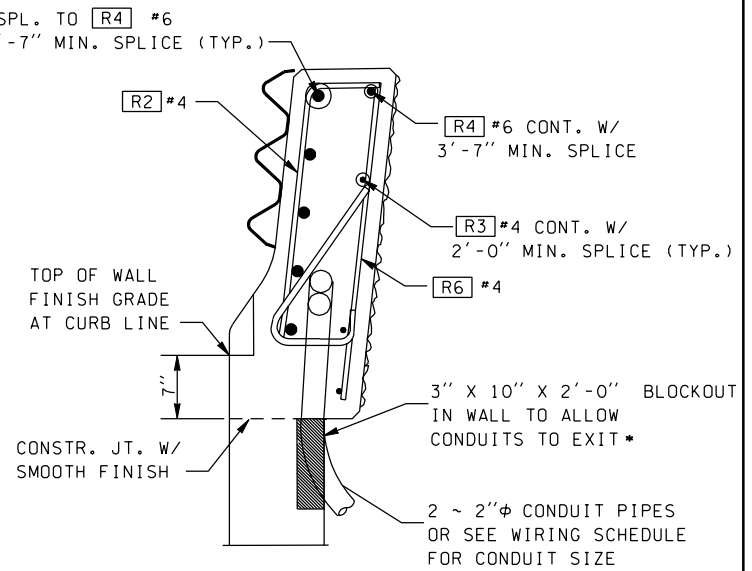
Diagram showing bending diagrams for bars R1, R1A, R2, and R9. R1 and R1A are shown with dimensions 10, 7, 2'-2", 1'-1", and 4". R2 is shown with dimensions 10, 7, 2'-5", 3'-0", 8", 97°, and 2'-5". R9 is shown with dimensions 10, 7, 2'-5", 3'-0", 8", 97°, and 2'-5".



SECTION C BRIDGE

FOR DETAILS NOT SHOWN SEE "OUTSIDE ELEVATION" AND "TYPICAL SECTION - TRAFFIC BARRIER"

* BLOCKOUT WIDTH MAY BE INCREASED TO 6" TO ALLOW CONDUITS OF A LARGER DIAMETER THAN 2" TO EXIT BARRIER OR WALL WITHOUT REBAR STEEL CONFLICT



SECTION C WALL

DETAIL FOR RETAINING WALL OR WINGWALL. FOR REINFORCING NOT SHOWN SEE STD. PLAN D-1a & D-1b OR WINGWALL PLAN. FOR DETAILS NOT SHOWN SEE SECTION C BRIDGE

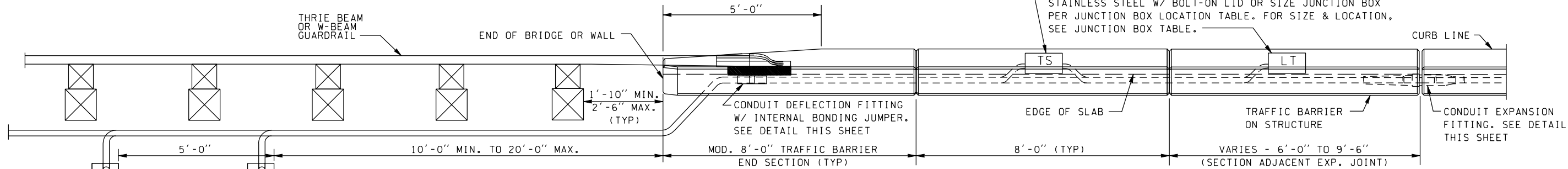
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												TRAFFIC BARRIER- F-SHAPE	SHEET 2 OF 3 SHEETS

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PLOT3

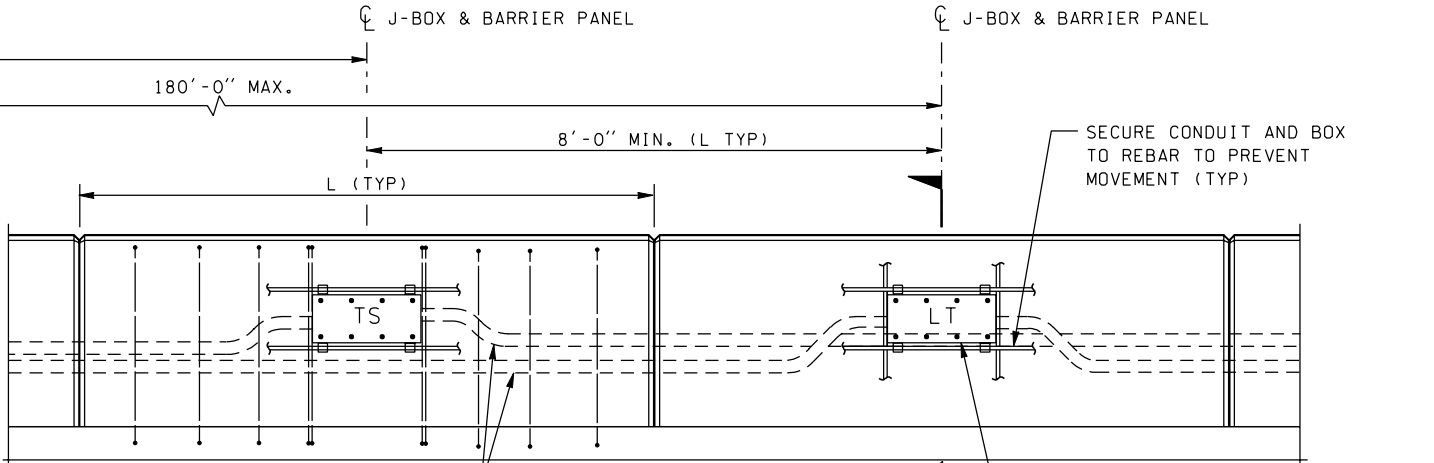
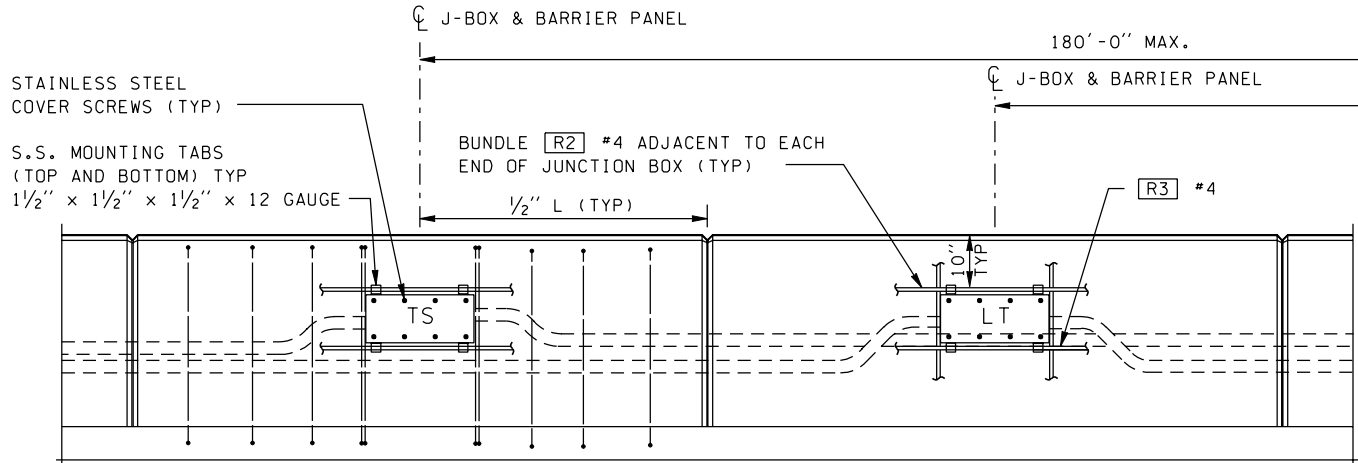
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PLAN - TRAFFIC BARRIER

TYP @ END OF MODIFIED TRAFFIC BARRIER END SECTION WHERE THRIE BEAM END SECTION "DESIGN F" STD. PLAN C-7a OR GUARDRAIL END SECTION "DESIGN D OR F" STD. PLAN C-5 IS USED.

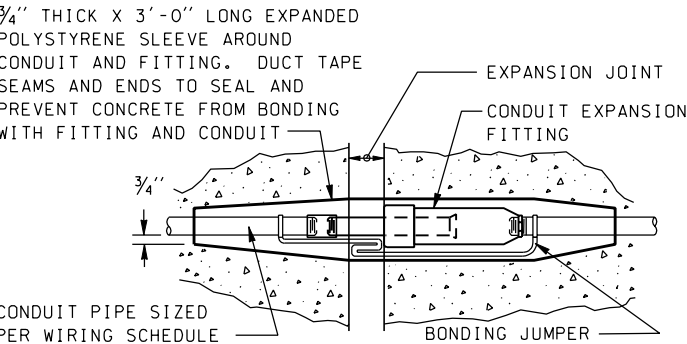


ELEVATION - CONDUITS & J-BOX IN TRAFFIC BARRIER

LABEL JUNCTION BOX COVER IN ACCORDANCE WITH STANDARD PLAN J-11a AND SPECIAL PROVISIONS. ADJACENT JUNCTION BOXES ARE SHOWN CENTERED BETWEEN ADJACENT DUMMY JOINTS. IF THE DISTANCE BETWEEN ADJACENT DUMMY JOINTS IS 16'-0" OR GREATER, PLACE ADJACENT BOXES SYMMETRICALLY ON EITHER SIDE OF THE CENTER OF ONE DUMMY PANEL WHILE MAINTAINING A 8'-0" MINIMUM BETWEEN CENTER LINES OF THE JUNCTION BOXES.

JUNCTION BOX LOCATIONS

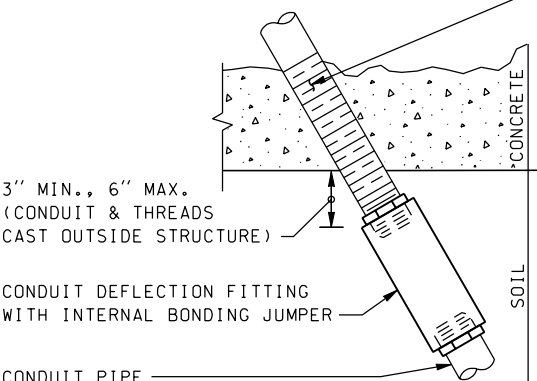
STATION	OFFSET



CONDUIT EXPANSION FITTING

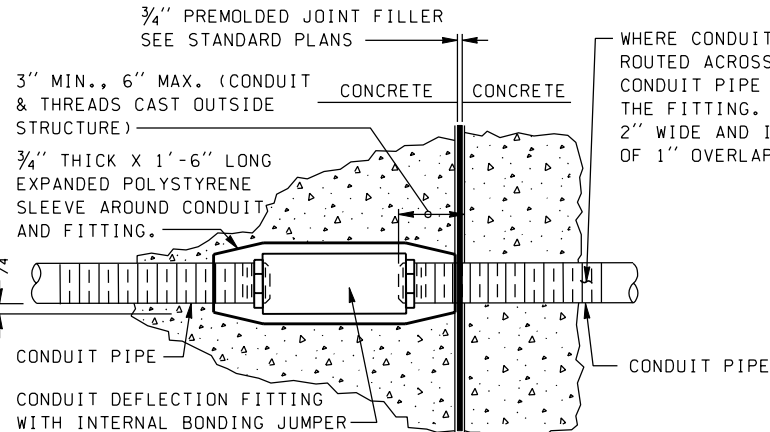
CONDUIT FITTING- (TYPE AX FOR MOVEMENT OF ± 2") AT BRIDGE EXPANSION JOINTS

WHERE CONDUIT IN A STRUCTURE IS ROUTED ACROSS A JOINT, WRAP STEEL CONDUIT PIPE FOR 12" ON EACH SIDE OF JOINT. PIPE WRAP TAPE SHALL BE 2" WIDE AND INSTALLED WITH A MINIMUM OF 1" OVERLAP



CONDUIT DEFLECTION FITTING A

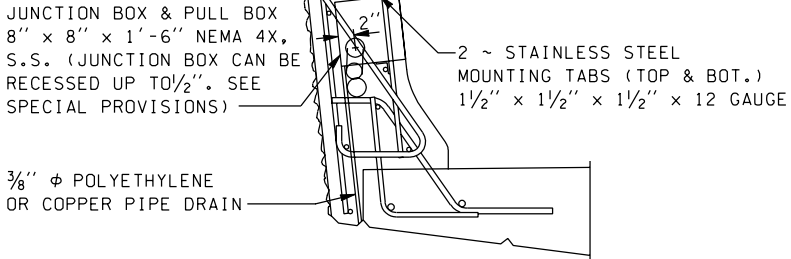
CONDUIT FITTING- TYPE DX FOR DEFLECTION OF 30° AND 3/4" MOVEMENT. PLACE AT CONDUIT PIPE EXIT FROM STRUCTURE



CONDUIT DEFLECTION FITTING B

CONDUIT FITTING- TYPE DX FOR DEFLECTION OF 30° AND 3/4" MOVEMENT. CONDUIT PIPES PLACED THROUGH RETAINING WALL TRAFFIC BARRIER SHALL BE FITTED WITH DEFLECTION FITTINGS AT A MAXIMUM SPACING OF 120 FEET. THE DEFLECTION FITTINGS SHALL BE PLACED AT THE TRAFFIC BARRIER OPEN JOINT THAT COINCIDES WITH THE RETAINING WALL STEM EXPANSION JOINT NEAREST TO THE TRANSVERSE CONSTRUCTION JOINT IN THE WALL FOOTING.

WHERE CONDUIT IN A STRUCTURE IS ROUTED ACROSS A JOINT, WRAP STEEL CONDUIT PIPE FOR 18" ON EACH SIDE OF THE FITTING. PIPE WRAP TAPE SHALL BE 2" WIDE AND INSTALLED WITH A MINIMUM OF 1" OVERLAP



SECTION A

SECURE CONDUIT & JUNCTION BOX TO REBAR CAGE USING S.S. TABS TO PREVENT MOVEMENT

NOTE: FOR JUNCTION BOX & PULL BOX SEE DETAIL SHEET FLUSH MOUNT S-S J-BOX

					REGION NO.	STATE	FED.AID PROJ.NO.
DESIGNED BY					10	WASH	
ENTERED BY J. HARVEY					JOB NUMBER		
CHECKED BY					CONTRACT NO.		
PROJ. ENGR.		1-10-02	deflection fitting revision	JH			
REGIONAL ADM.		4-4-01	NEW BARRIER SHEET	JH			
	DATE	DATE	REVISION	BY			

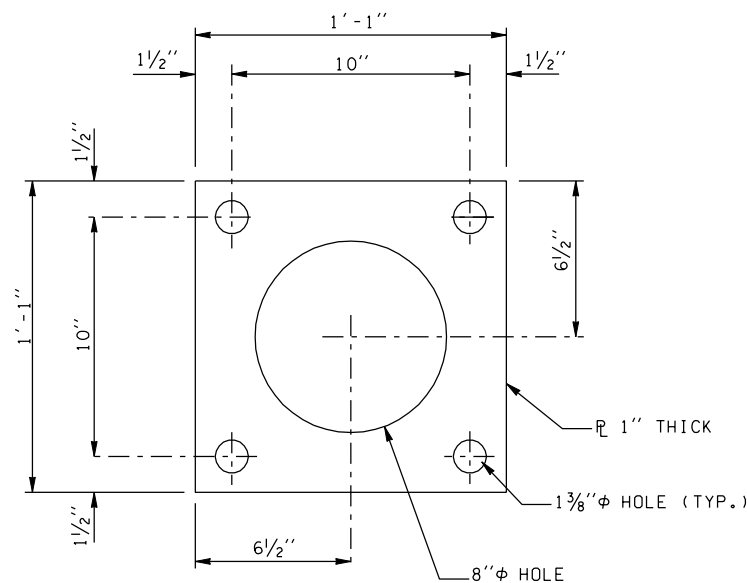
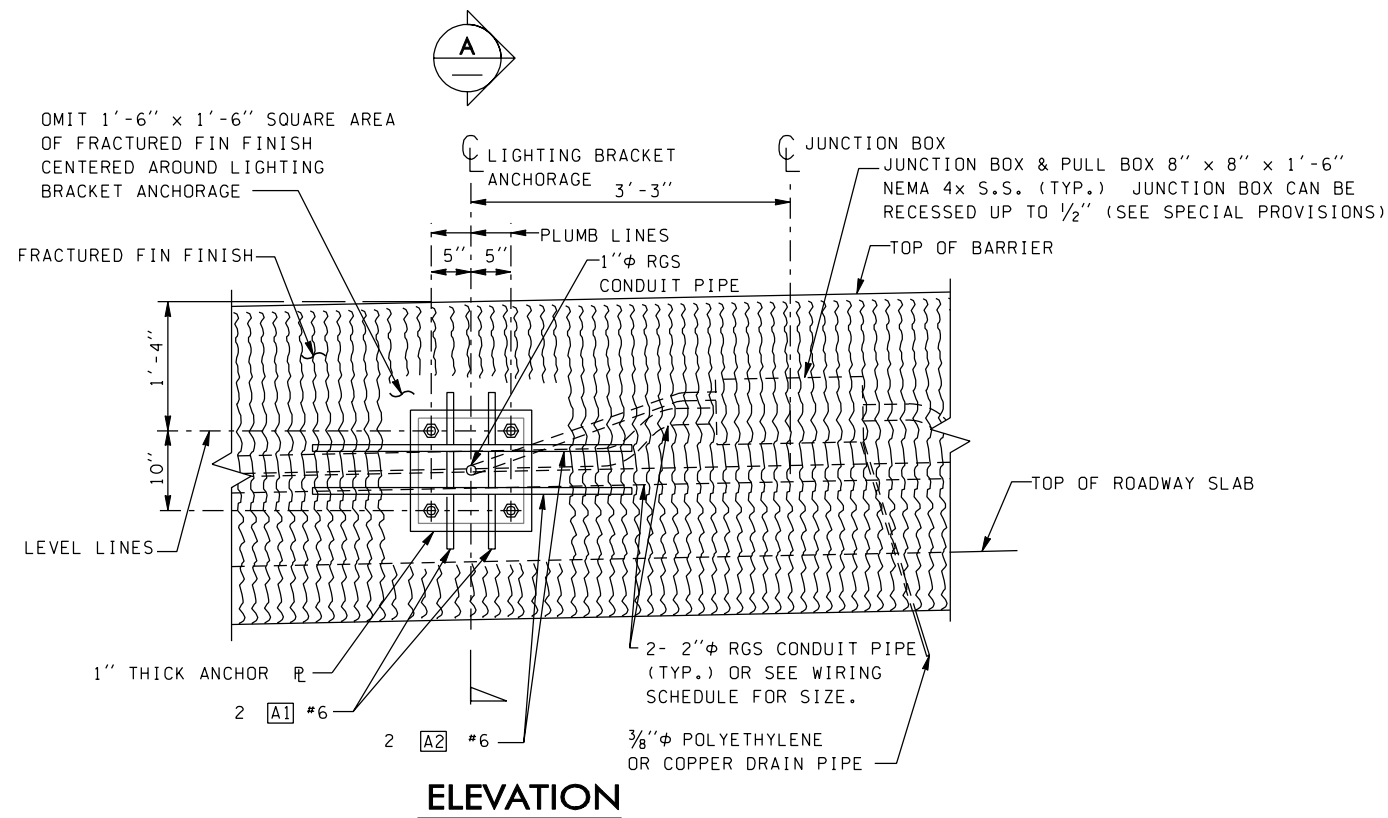


STANDARD TRAFFIC BARRIERS ENGLISH

TRAFFIC BARRIER- F SHAPE DETAIL 3 OF 3

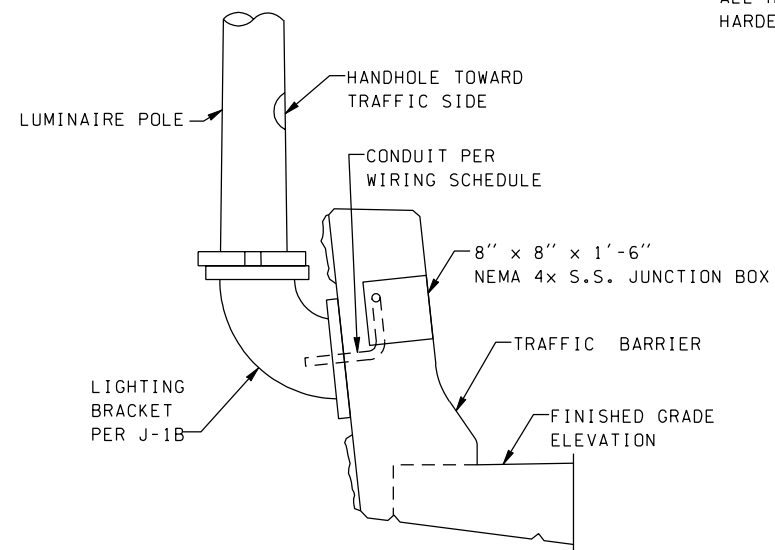
1.03E

SHEET 3 OF 3 SHEETS



ANCHOR PLATE

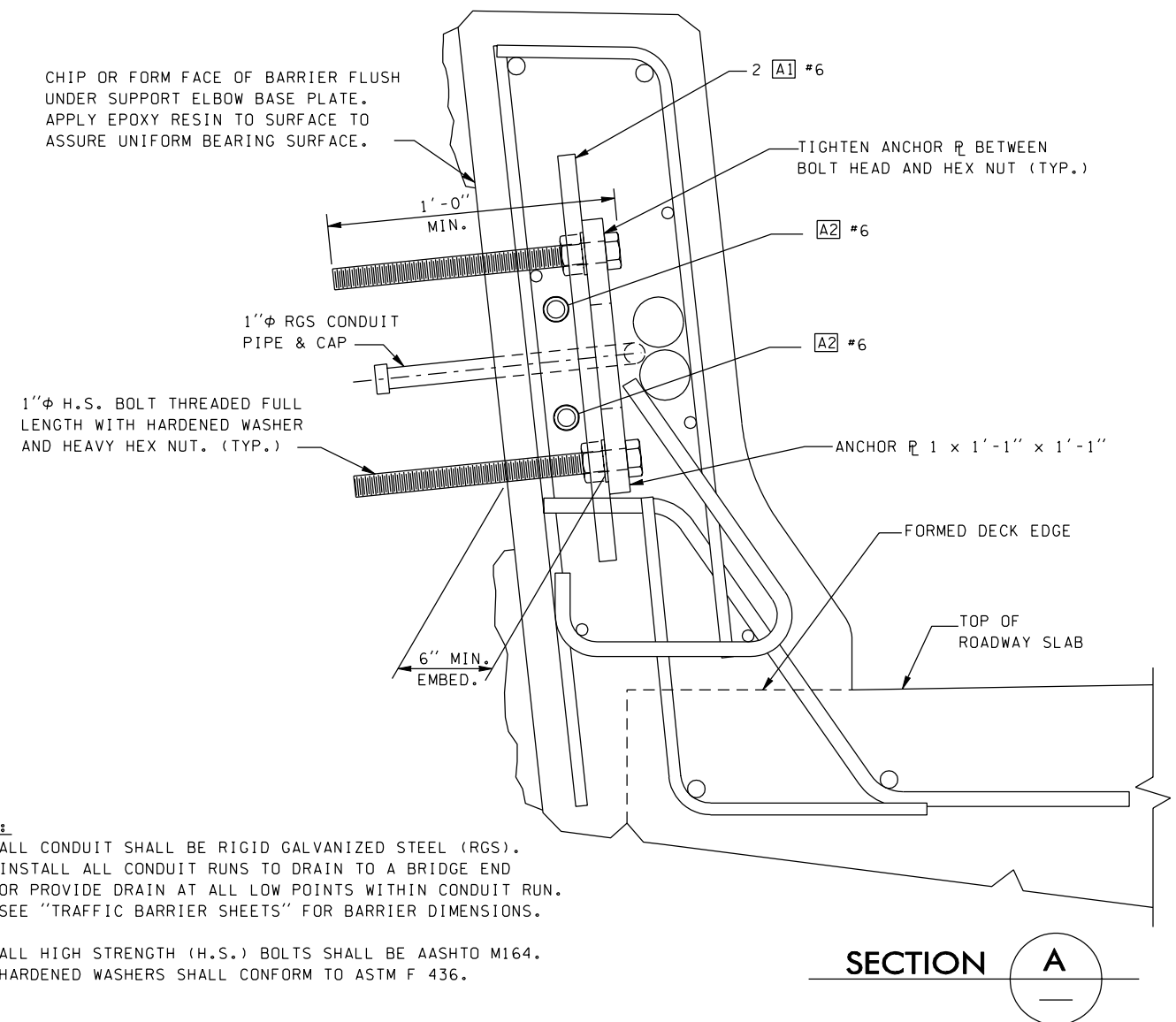
GALVANIZE PER AASHTO M 111



ELEVATION PROFILE

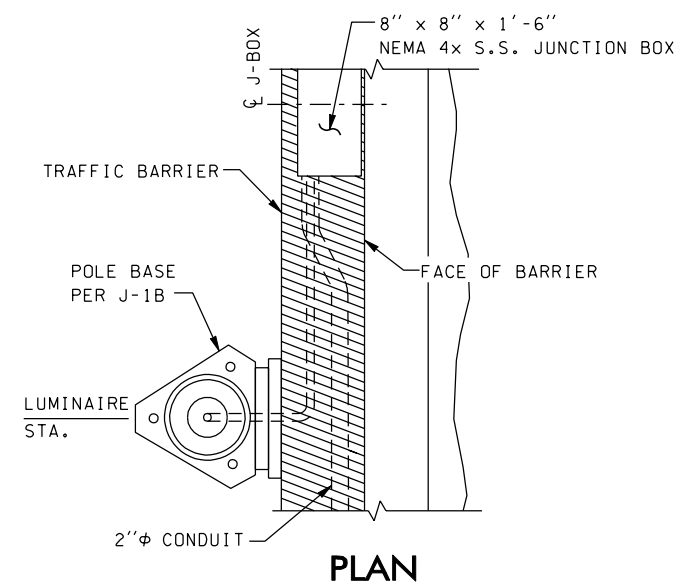
LUMINAIRE SUPPORT

(SHOWN FOR BRIDGE, SIMILAR FOR WALLS)



NOTE :

- ALL CONDUIT SHALL BE RIGID GALVANIZED STEEL (RGS).
INSTALL ALL CONDUIT RUNS TO DRAIN TO A BRIDGE END
OR PROVIDE DRAIN AT ALL LOW POINTS WITHIN CONDUIT RUN.
SEE "TRAFFIC BARRIER SHEETS" FOR BARRIER DIMENSIONS.
- ALL HIGH STRENGTH (H.S.) BOLTS SHALL BE AASHTO M164.
HARDENED WASHERS SHALL CONFORM TO ASTM F 436.



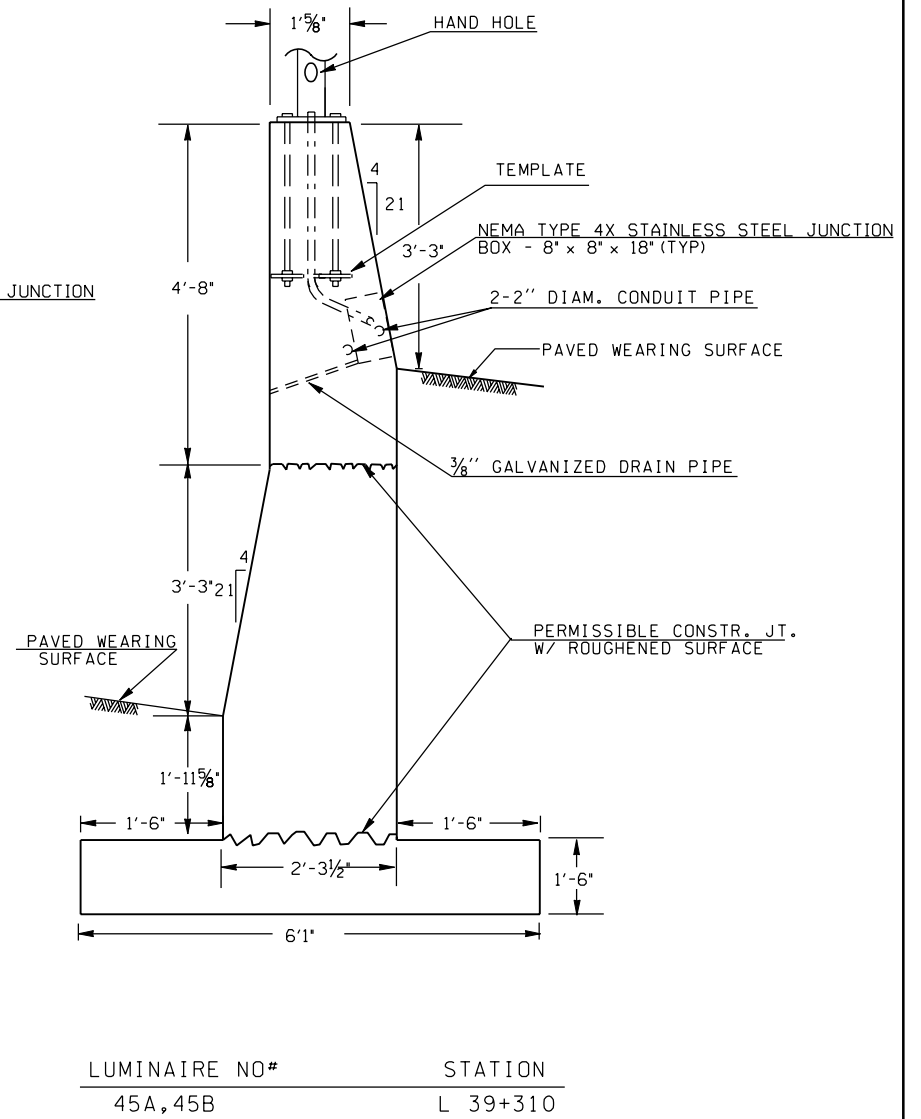
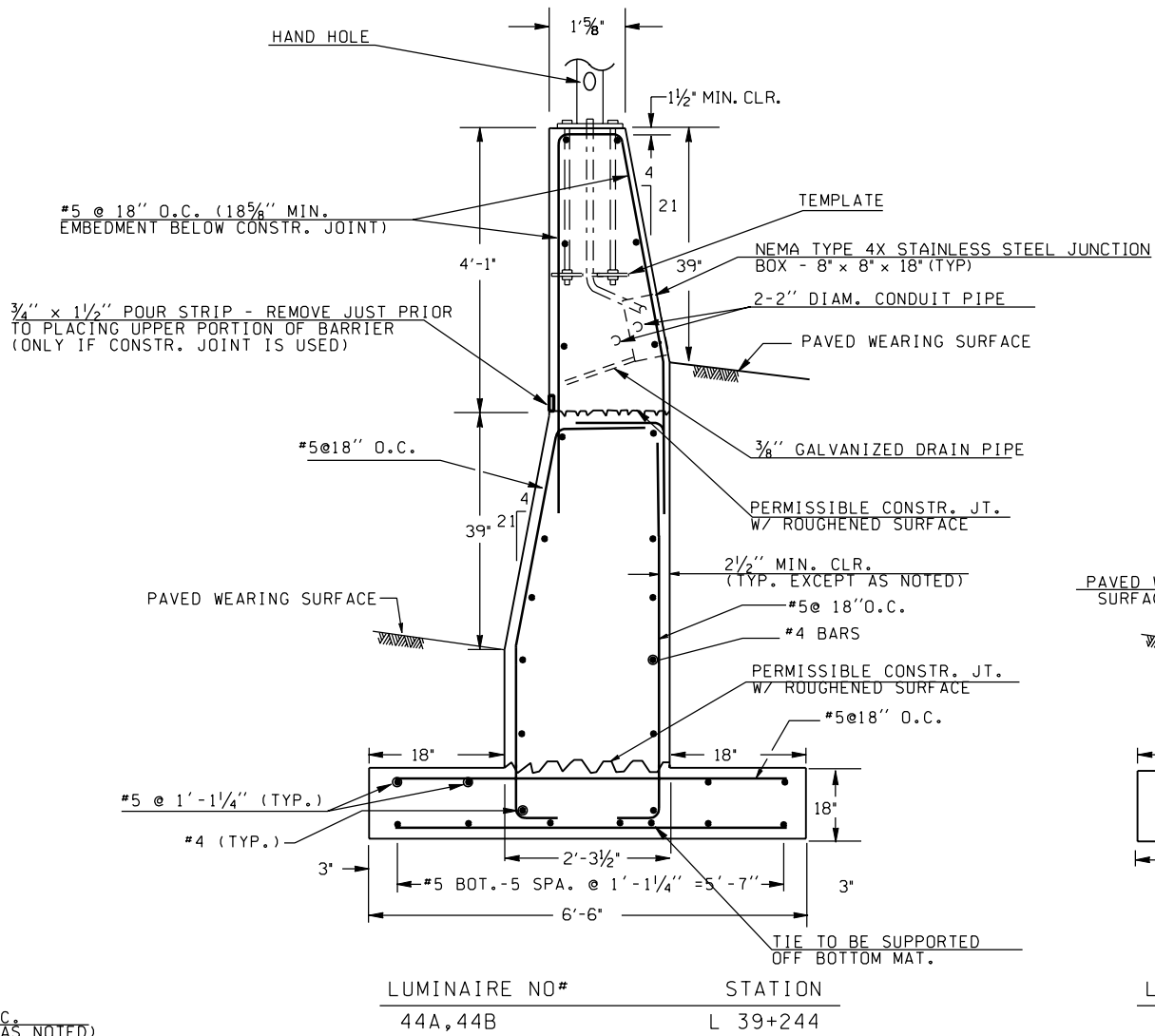
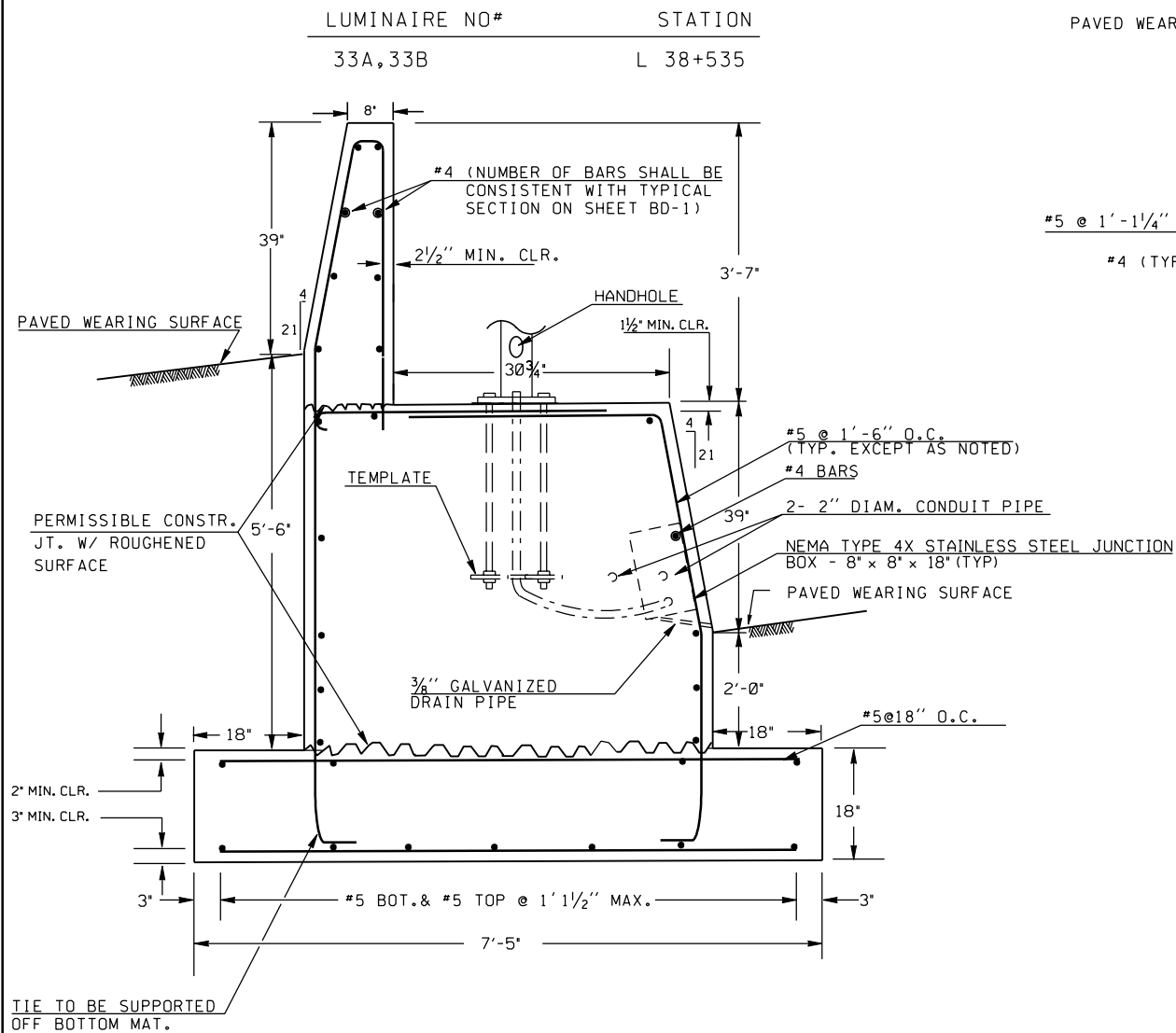
PLAN

LUMINAIRE POLE LOCATIONS ON BRIDGE & WALLS	
STATION	OFFSET
XXX 0+000.000	0.000 RT.
XXX 0+000.000	0.000 RT.

<u>ANCHORAGE BARLIST</u>			
ALL REINF. SHALL BE AASHTO M31, GRADE 60.			
MARK #	SIZE	LENGTH	BEND TYPE
A1	6	1' - 9"	STRAIGHT
A2	6	5' - 0"	STRAIGHT

[illegible]

DETAIL D
TRANSITIONAL SECTION CONCRETE BARRIER
LIGHT STANDARD DETAIL

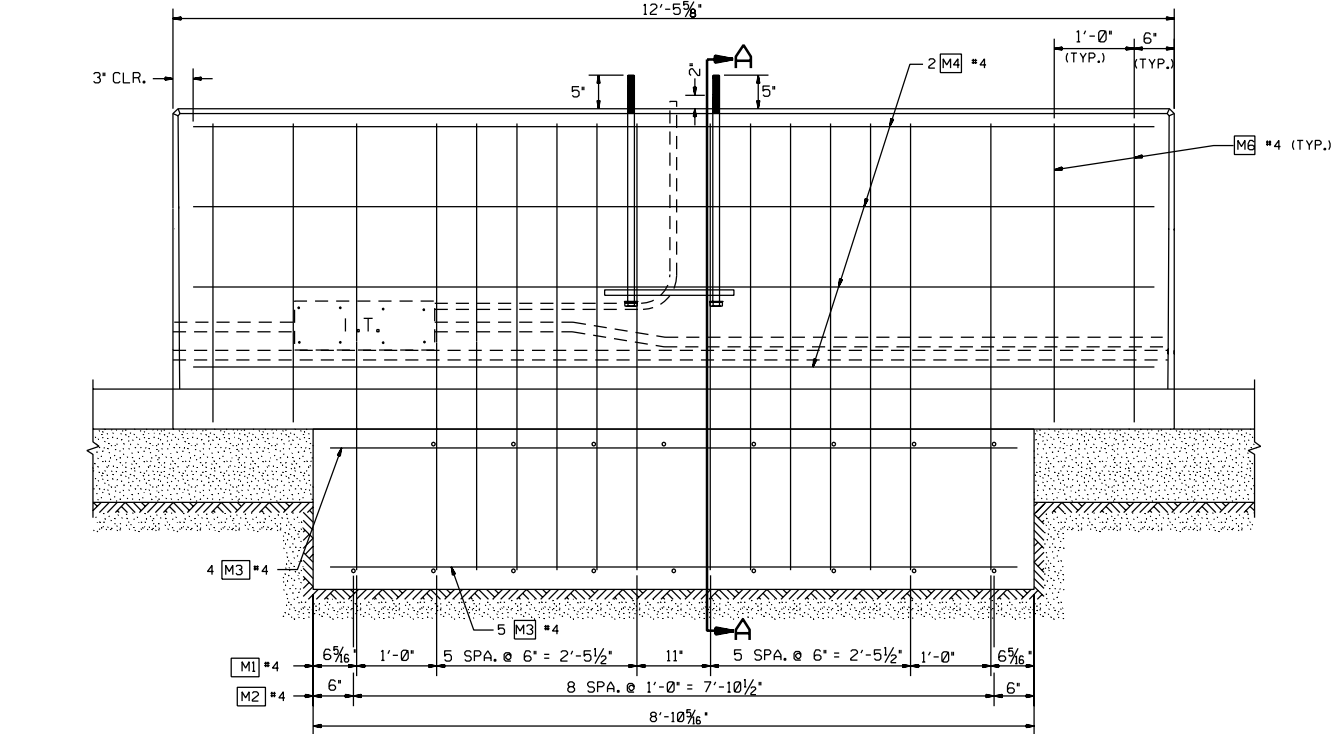


DETAIL E
ELEVATED SECTION CONCRETE BARRIER
LIGHT STANDARD DETAIL

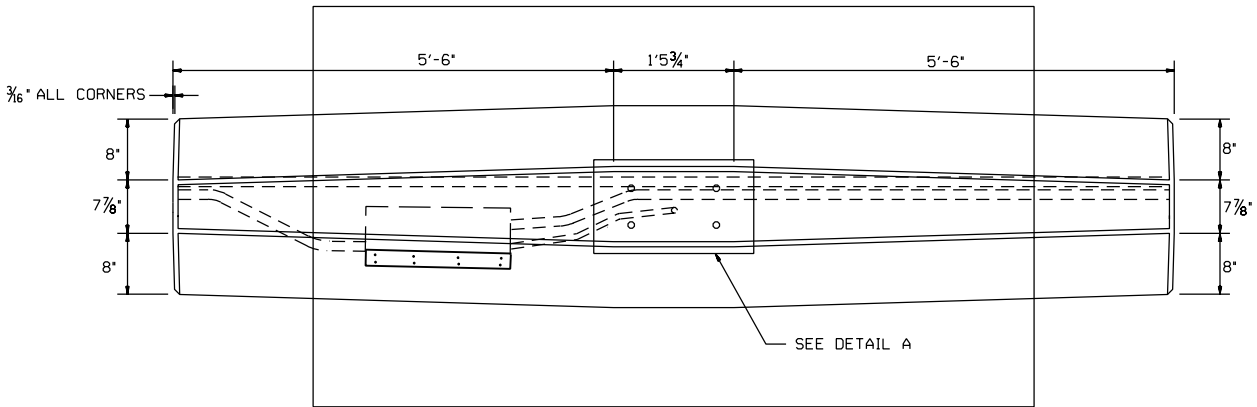
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DESIGNED BY				10	WASH					
ENTERED BY				JOB NUMBER			CONTRACT NO.		ILLUMINATION DETAILS	SHEET OF SHEETS
CHECKED BY										
PROJ. ENGR.		10-6-99	TEXT EDITS	JH						
REGIONAL ADM.		2-9-99	NEW ENGLISH SHEET	JH						
	DATE	DATE	REVISION	BY						

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PLOT2



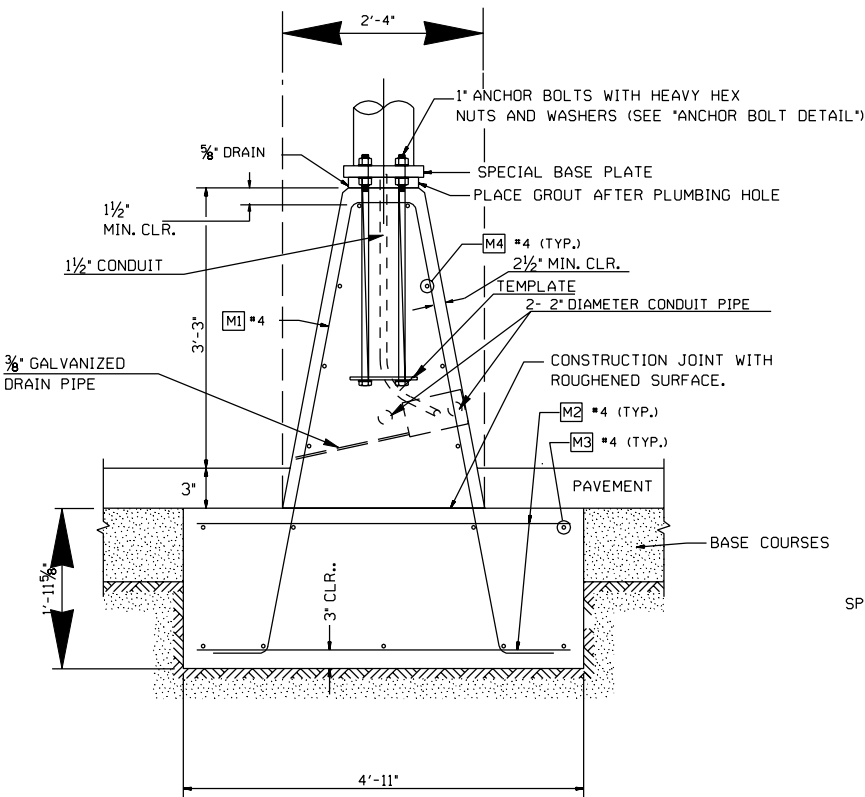
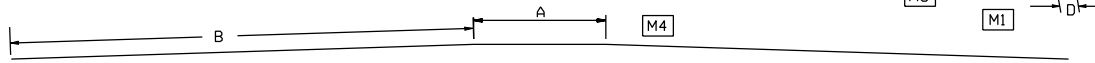
ELEVATION



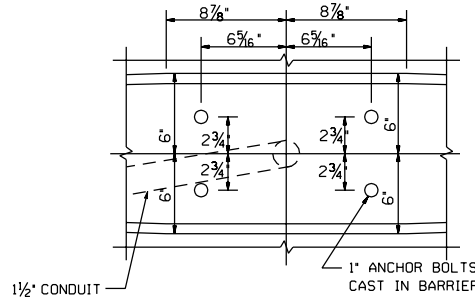
PLAN

NOTE: ALL REINFORCEMENT LISTED BELOW IS PER INSTALLATION

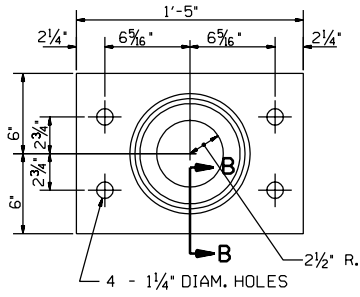
BAR LIST				ALL DIMENSIONS ARE OUT TO OUT				ALL REINFORCEMENT SHALL CONFORM TO AASHTO M31 GR.60.	
MARK	LOCATION	NO.	SIZE	A	B		D	LENGTH	BENDING DIAGRAM
M1	FOOTING-DOWEL	14	4	70 TO 170	1.580		150	3.710 TO 3.785	
M2	FOOTING	18	4		STRAIGHT			1.400	
M3	FOOTING	9	4		STRAIGHT			2.600	
M4	CONCRETE BARRIER	8	4	450	1.600			3.650	
M6	CONCRETE BARRIER	4	4	70 TO 95	985			2.130 to 2.155	



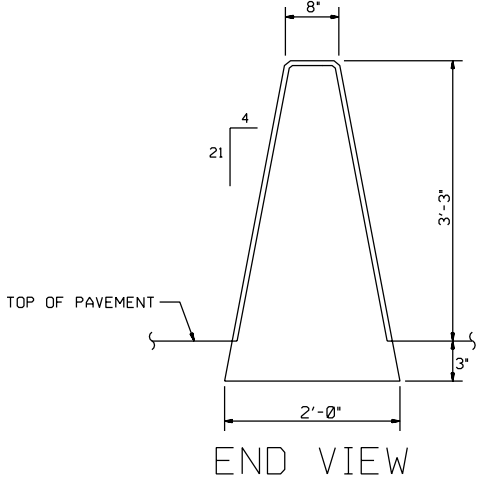
SECTION A-A



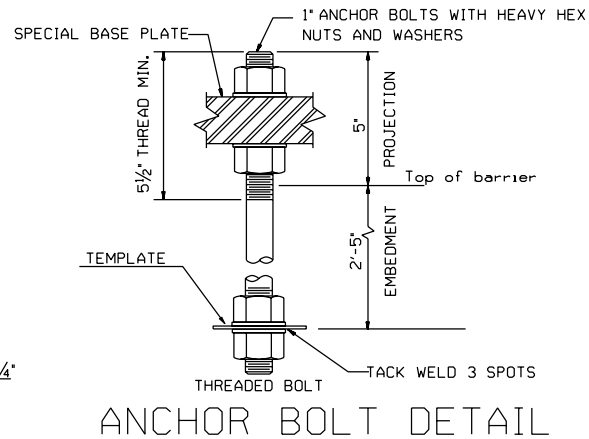
DETAIL A



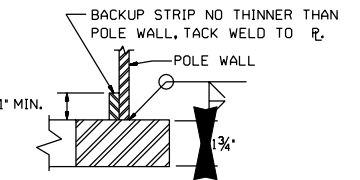
SPECIAL BASE PLATE



END VIEW



ANCHOR BOLT DETAIL




SECTION B-B

NOTES:

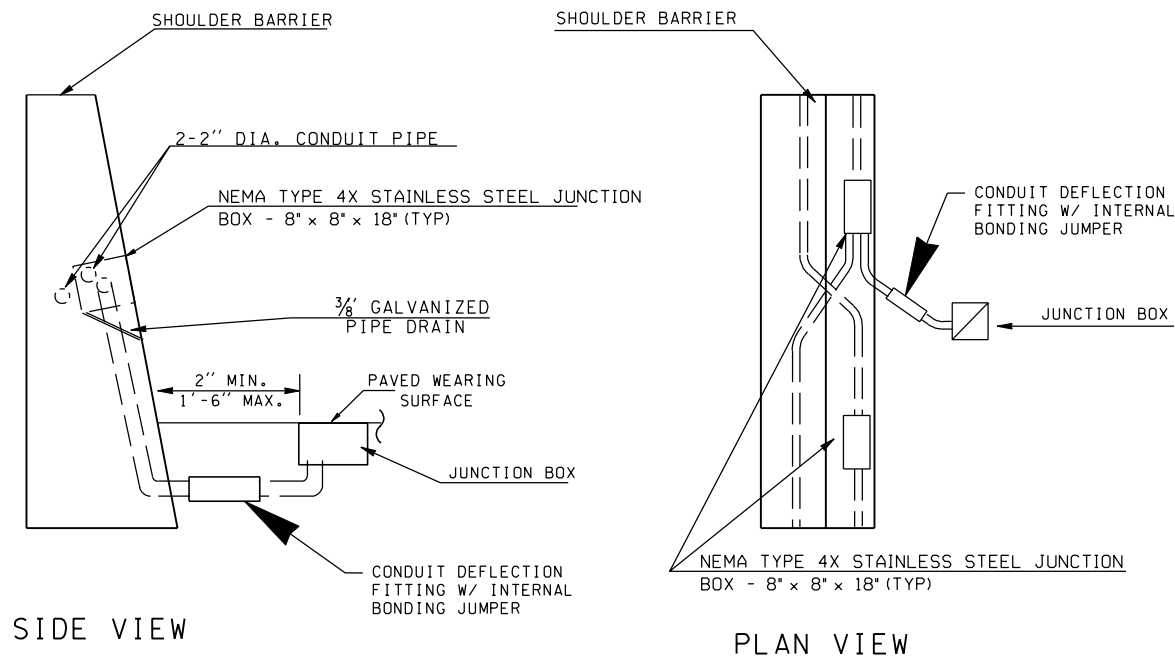
- ANCHOR BOLTS SHALL BE ACCURATELY LOCATED AND SECURED IN PLACE WITH TEMPLATE PRIOR TO POURING CONCRETE.
- ANCHOR BOLT MATERIALS: BOLT - ASTM A449; NUTS - ASTM A563; WASHERS - ASTM F436M. GALVANIZE PER ASTM A153.
- THIS PLAN SHALL BE USED FOR 40' AND 50' LIGHT STANDARDS WITH 12' MAXIMUM LENGTH DOUBLE MAINT ARMS.
- REFER TO APPLICABLE STANDARDS PLANS FOR OTHER DETAILS ON LIGHT STANDARDS.

SINGLE SLOPE CAST IN PLACE CONCRETE BARRIER LIGHT STANDARD DETAIL

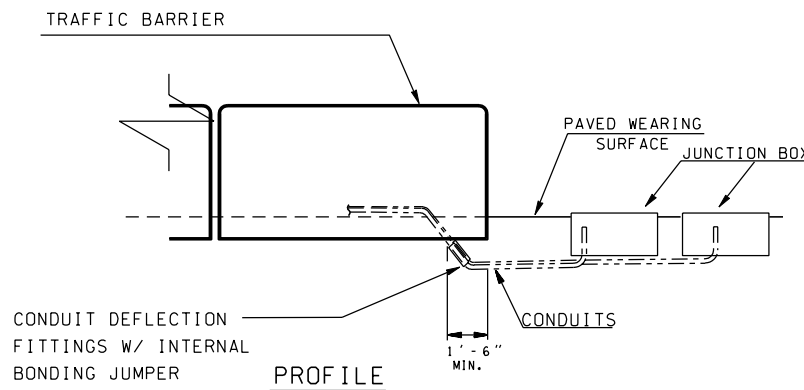
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DESIGNED BY					10	WASH					
ENTERED BY					JOB NUMBER						
CHECKED BY					CONTRACT NO.						
PROJ. ENGR.											
REGIONAL ADM.		2-9-99	NEW ENGLISH SHEET	JH						OF	SHEETS
	DATE	DATE	REVISION	BY						BARRIER W / LT. STD. (SHEET 1 OF 2)	

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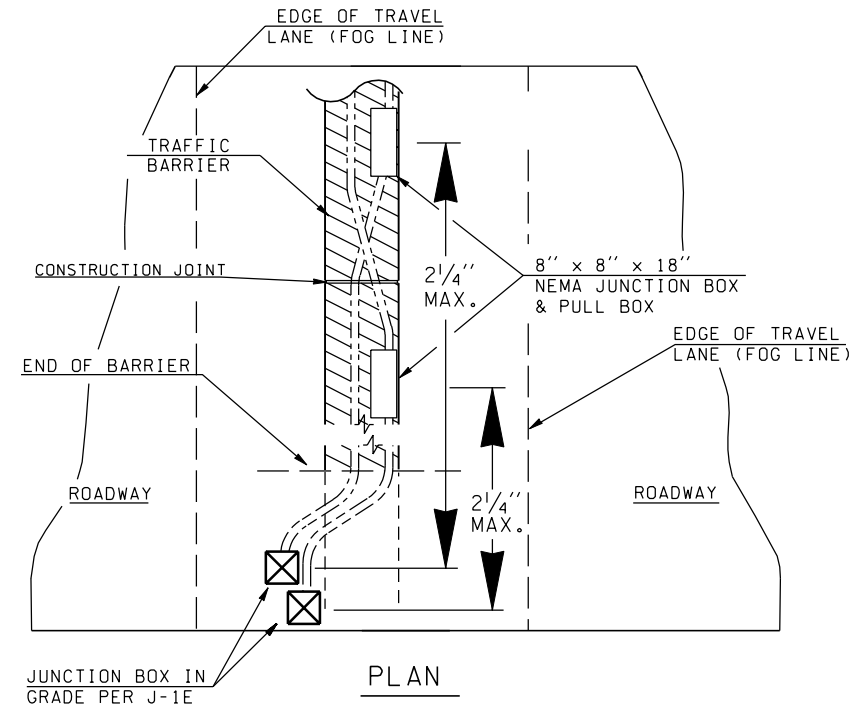
PLOT3



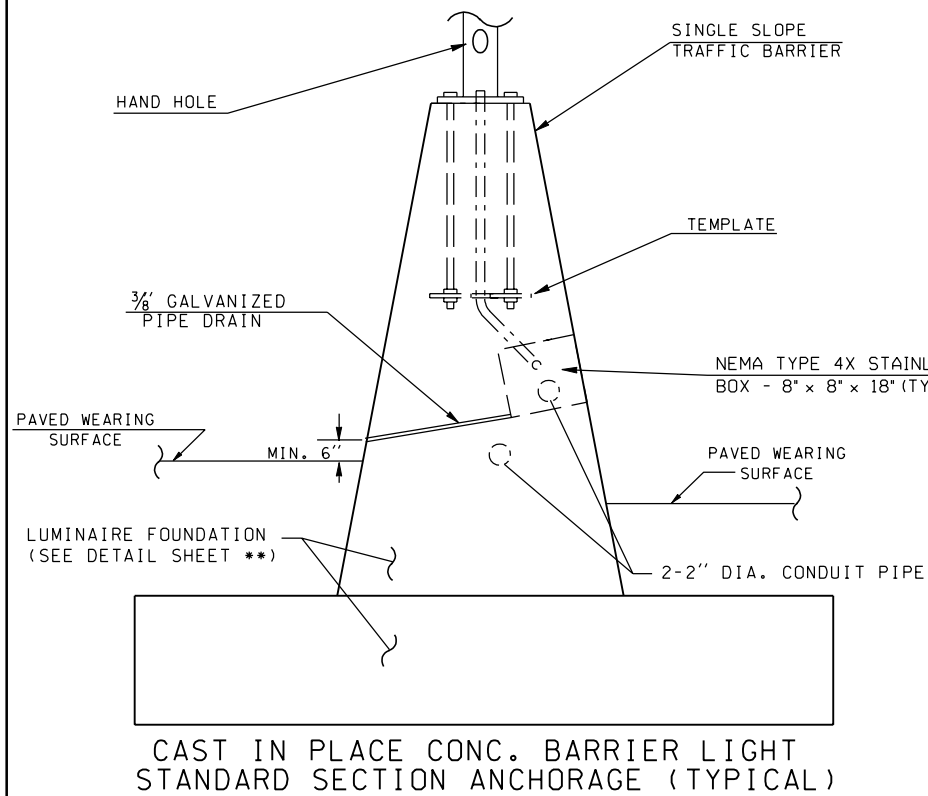
DETAIL C



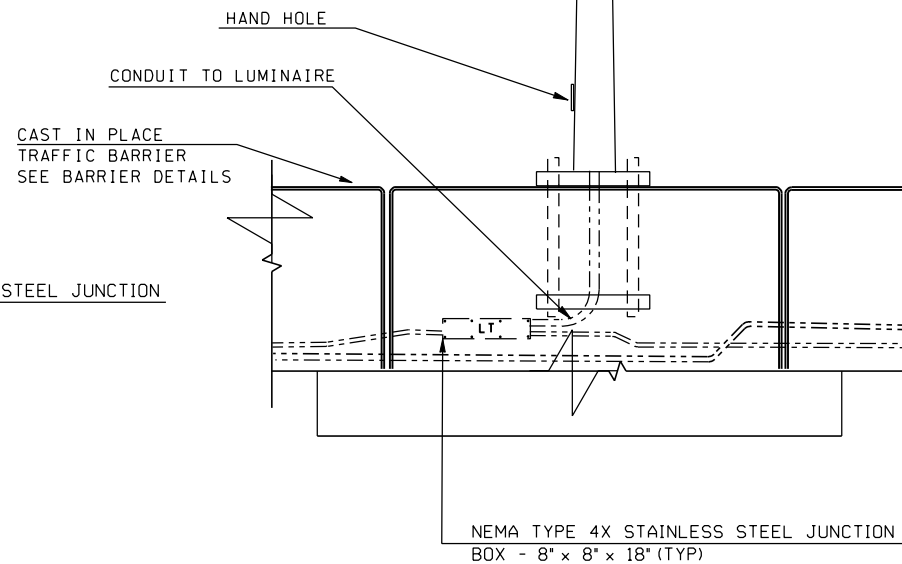
CONDUIT TRANSITION FROM BARRIER TO GRADE



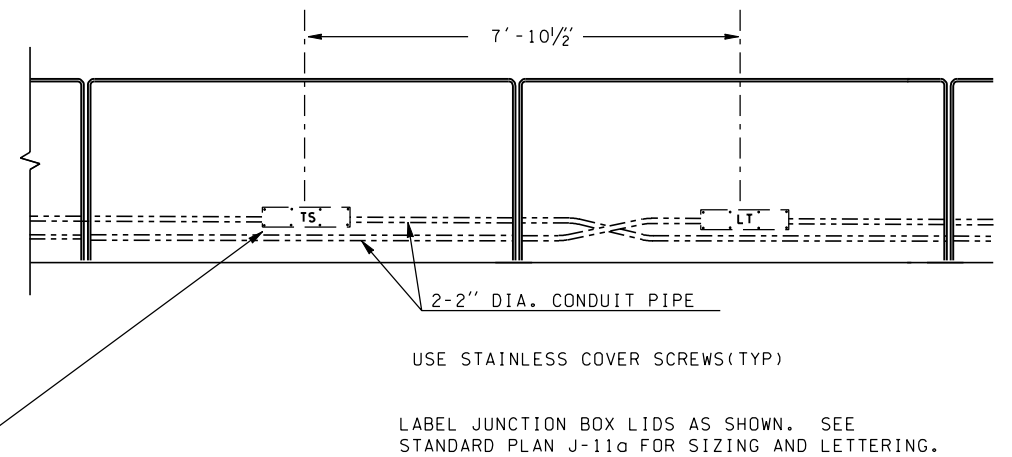
PLAN




CAST IN PLACE CONC. BARRIER LIGHT STANDARD SECTION ANCHORAGE (TYPICAL)



ELEVATION TRAFFIC BARRIER WITH CONDUIT AND JUNCTION BOX

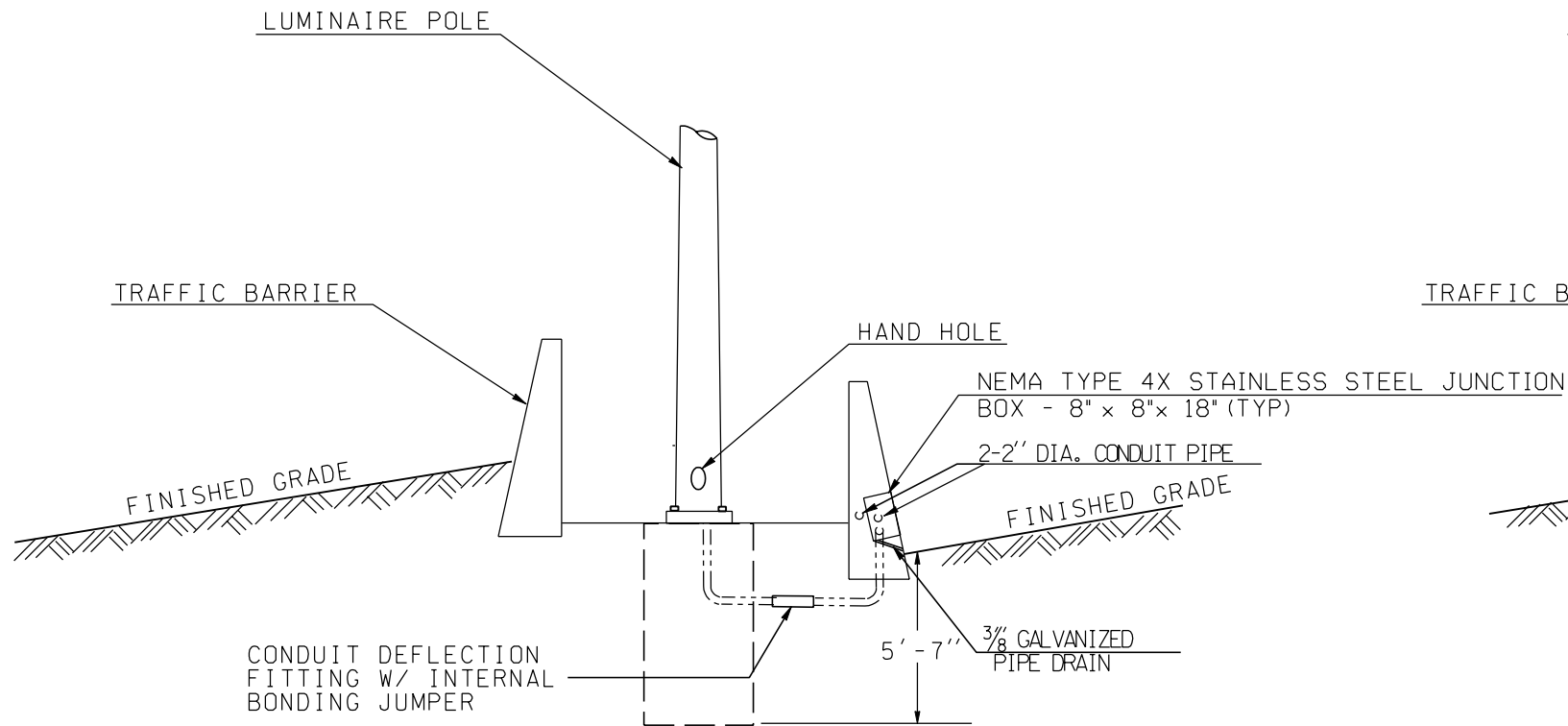


ELEVATION CONDUIT AND JUNCTION BOX IN TRAFFIC BARRIER

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DESIGNED BY					10	WASH					
ENTERED BY					JOB NUMBER					OF	
CHECKED BY										SHEETS	
PROJ. ENGR.		10-6-99	TEXT EDITS	JH							
REGIONAL ADM.		2-9-99	NEW ENGLISH SHEET REVISION	JH	CONTRACT NO.						
	DATE	DATE		BY						BARRIER W / LT. STD. (SHEET 2 OF 2)	

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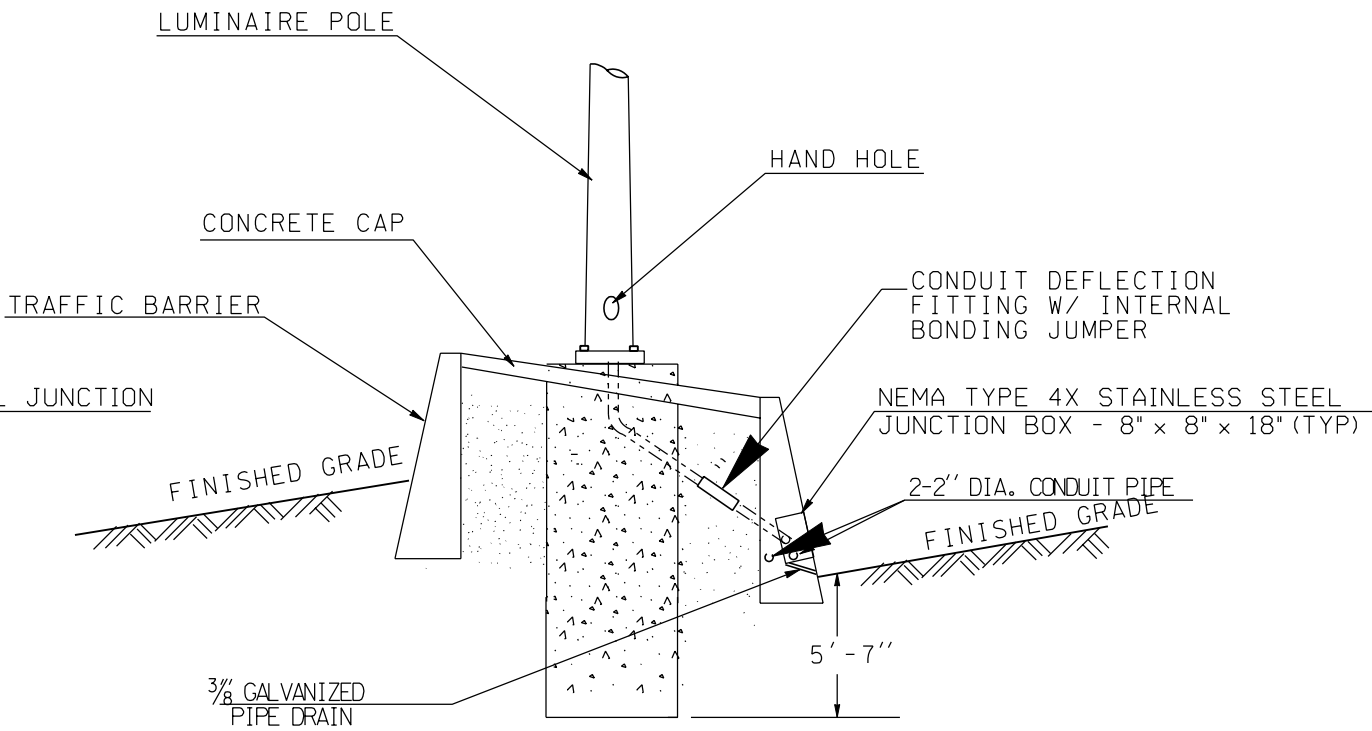
PLOT4



SEE STANDARD PLAN J-1b AND ROADWAY SECTION (FILL IN) FOR APPLICABLE DETAILS

LUMINAIRE NO.	STATION
(FILL IN)	(FILL IN)
(FILL IN)	(FILL IN)

DETAIL A




SEE STANDARD PLAN J-1b AND ROADWAY SECTION A FOR APPLICABLE DETAILS

LUMINAIRE NO.	STATION
(FILL IN)	(FILL IN)

DETAIL B

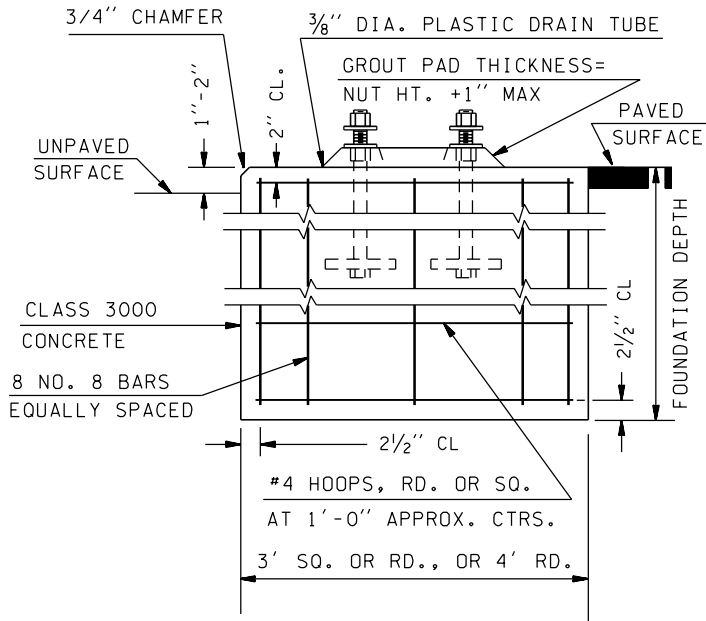
LIGHT STANDARD BARRIER FOUNDATION DETAIL

(FOR BARRIER RAIL DETAILS SEE SHEET XXX-XXX)

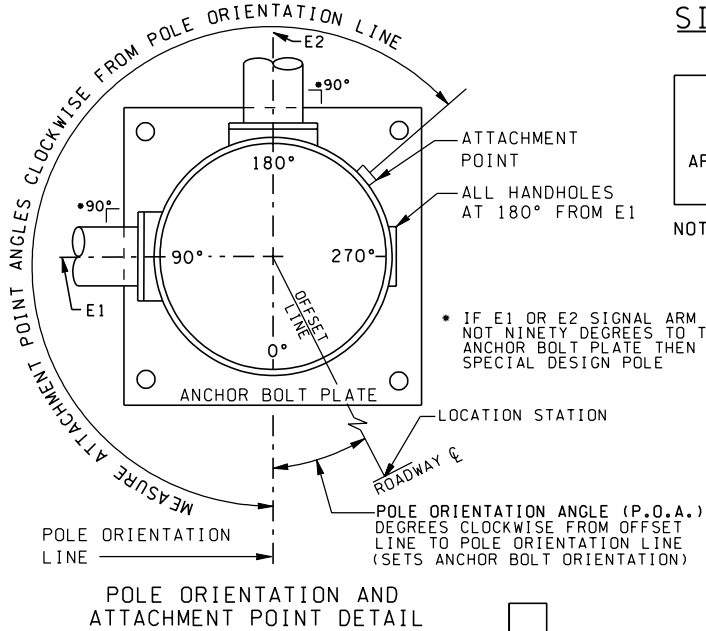
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DESIGNED BY					10	WASH					
ENTERED BY					JOB NUMBER						
CHECKED BY					CONTRACT NO.						
PROJ. ENGR.		10-6-99	TEXT EDITS	JH							
REGIONAL ADM.		2-9-99	NEW ENGLISH SHEET	JH							
	DATE	DATE	REVISION	BY						ILLUMINATION DETAILS	SHEET OF SHEETS

FOUNDATION DEPTH TABLE							
ALLOWABLE LATERAL BEARING PRESSURE (psf)	FOUNDATION TYPE	XYZ (CUBIC FEET)					
		TYPE II, III AND SD MAST ARM STANDARDS					
		600	900	1,200	1,500	1,900	2,300
1,000	3' ROUND	10'	10'	11'	11'	13'	15'
	3' SQUARE	8'	8'	9'	9'	10'	11'
	4' ROUND	8'	8'	9'	9'	10'	11'
1,500	3' ROUND	8'	8'	9'	11'	13'	15'
	3' SQUARE	7'	7'	7'	8'	8'	9'
	4' ROUND	7'	7'	7'	8'	8'	9'
2,500	3' ROUND	6'	6'	7'	11'	13'	15'
	3' SQUARE	6'	6'	6'	6'	7'	7'
	4' ROUND	6'	6'	6'	6'	7'	7'

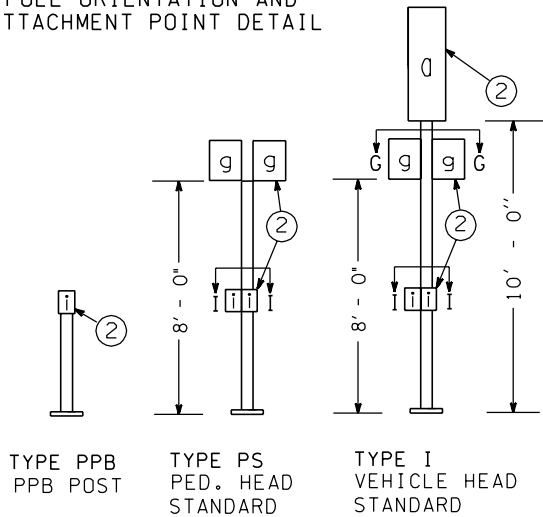
THIS TABLE BASED ON A Ø VALUE OF 26°. FOR DOUBLE MAST ARM STANDARDS WITH 90° BETWEEN ARMS, USE THE LARGER XYZ VALUE FOR FOUNDATION DEPTH SELECTION. A SPECIAL FOUNDATION DESIGN IS REQUIRED FOR DOUBLE ARM STANDARDS IF THE ANGLE IS NOT 90°.



FOUNDATION DETAIL



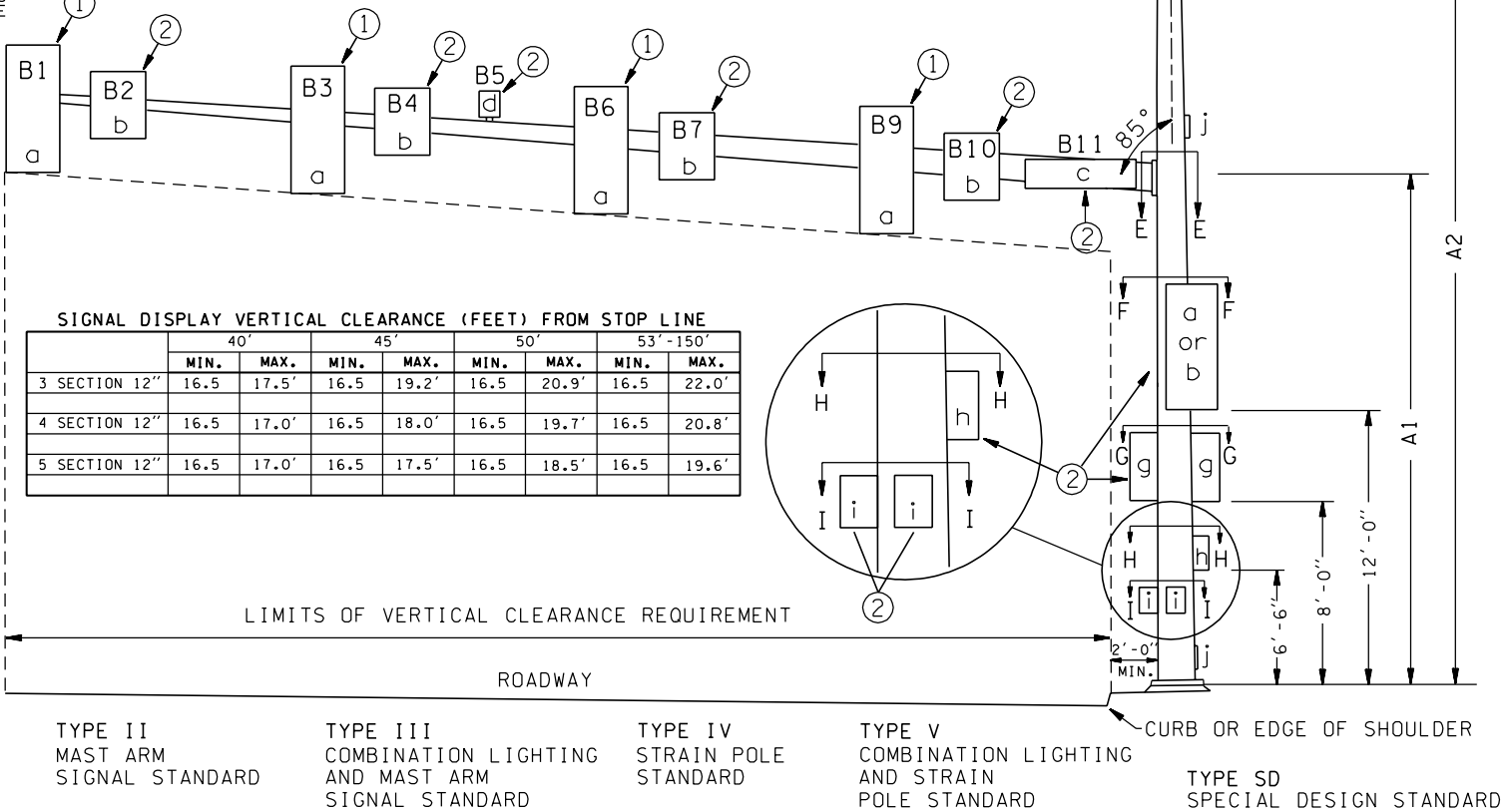
POLE ORIENTATION AND ATTACHMENT POINT DETAIL



SIGNAL STANDARD IDENTIFICATION TAG DETAIL


EXAMPLE		
STD. NO. XX	SIGNAL STANDARD NO.	STD. NO. 02
SRXXX, MP XXX.XX	STATE ROUTE AND MILE POST NO.	SR97, MP 069.09
MANUFACTURER	MANUFACTURER	MANUFACTURER
APPROVED DWG. XXXXXX	APPROVED DRAWING NO.	APPROVED DWG. AB12345
FAB. X/XX/XXXX	FABRICATION DATE	FAB. 6/14/2002

NOTE: CORROSION RESISTANT METAL TAG SECURED WITH (2) 0.125" RIVETS AS FOLLOWS: POLE SHAFT - LOCATED WITHIN 6" ABOVE HAND HOLE, SIGNAL AND LUMINAIRE MAST ARM - LOCATED WITHIN 6" OF THE POLE SHAFT CONNECTION POINT. TEXT SHALL BE A MINIMUM OF 3/16" HIGH, STAMPED OR EMBOSSED.



LEGEND

- a. Vehicle Display
- b. Sign
- c. Street Name Sign
- d. Pre-Empt Detector
- e. Deleted (10/22/90)
- f. Luminaire
- g. Pedestrian Display
- h. Cabinet
- i. PPB-M
- j. Handhole

SIGNAL STANDARD DETAIL CHART																																						
STD. No. 	SR No.	SR MILE POST	FIELD LOCATION				TYPE	MOUNTING HEIGHT (FT)		SIGNAL MAST ARM DATA													LUMINAIRE ARM (FT)	POLE ATTACHMENT POINT ANGLES (deg)										FOUNDATION DEPTHS (FT)				REMARKS
										OFFSET DISTANCES (FT)						(Z) (POLE C. TO ATTACHMENT POINT)			WINDLOAD AREAS (FT) ²																			
			STATION	OFFSET	LT.	RT.		P.O.A.	A1	A2	B1	B2	B3	B4	B5	B6	B11	B1	B2	B3	B4	B6		B11	TOTAL (FT) ³	C	D	E1	E2	F	G1	G2	H	I1	I2	3' RD.	3' SQ.	

NOTES

- ① MOUNTING COUPLING INSTALLED AT OFFSET DISTANCE INDICATED IN CHART.

ALTERNATE NOTE 1

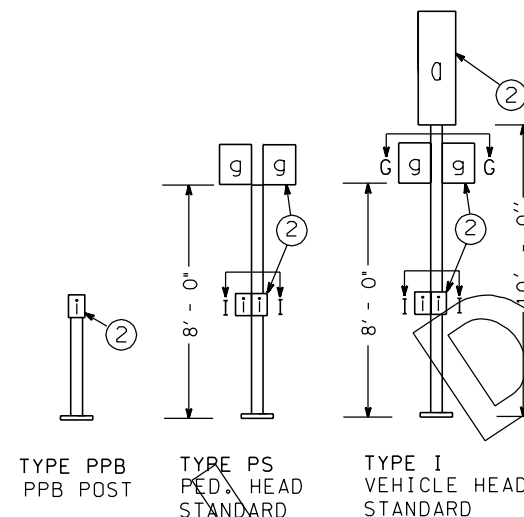
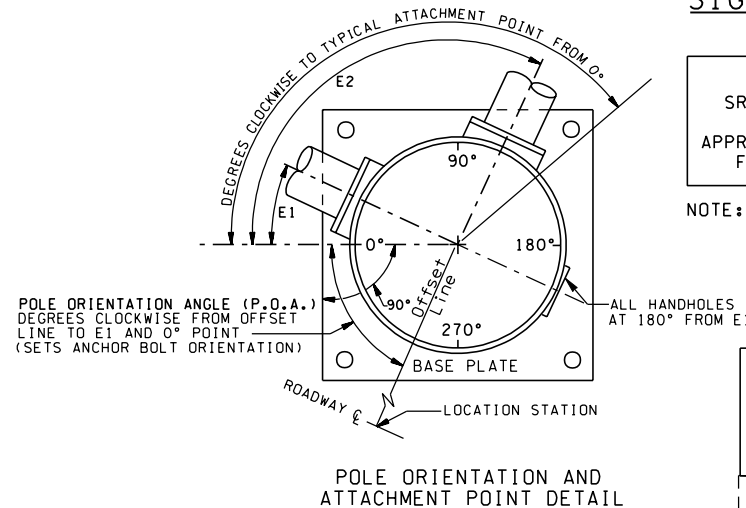
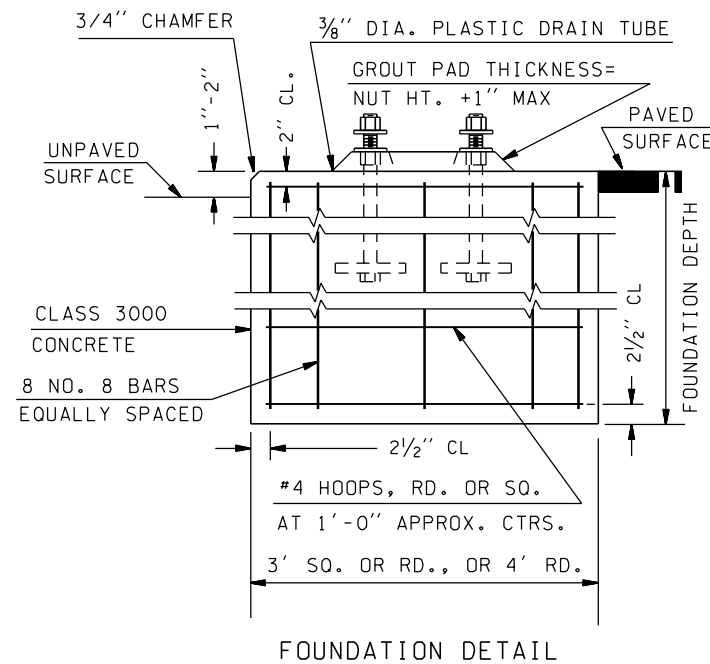
FOR TYPE N MOUNT ONLY
DRILL 1" HOLE IN MAST ARM AND
INSTALL PLASTIC SPLIT BUSHING
FOR CABLE ENTRANCE.

- ② FIELD INSTALLED.

FILE NAME	s:\414126\Electrical\MASTER FILES\DETAILS\SIGNAL.E.DGN	REGION NO.	STATE	FED.AID PROJ.NO.	Washington State Department of Transportation	ENGLISH	SIGNAL STANDARD	PLOT1
TIME	07:21:04 AM	10	WASH					
DATE	08/14/2002	JOB NUMBER						
DESIGNED BY	WSDOT	CONTRACT NO.		LOCATION NO.	DATE	DATE	SHEET	OF SHEETS
ENTERED BY	WSDOT							
CHECKED BY	WSDOT							
PROJ. ENGR.	NEW SHEET DESIGNATION	DATE	BY					
REGIONAL ADM.	REVISION							

FOUNDATION DEPTH TABLE							
ALLOWABLE LATERAL BEARING PRESSURE (psf)	FOUNDATION TYPE	XYZ (CUBIC FEET)					
		TYPE II, III AND SD MAST ARM STANDARDS					
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	3' SQUARE	8'	8'	9'	9'	10'	11'
	4' ROUND	8'	8'	9'	9'	10'	11'
1,500	3' ROUND	8'	8'	9'	11'	13'	15'
	3' SQUARE	7'	7'	7'	8'	8'	9'
	4' ROUND	7'	7'	7'	8'	8'	9'
2,500	3' ROUND	6'	6'	7'	11'	13'	15'
	3' SQUARE	6'	6'	6'	6'	7'	7'
	4' ROUND	6'	6'	6'	6'	7'	7'

THIS TABLE BASED ON A θ VALUE OF 26° . FOR DOUBLE MAST ARM STANDARDS WITH 90° BETWEEN ARMS, USE THE LARGER XYZ VALUE FOR FOUNDATION DEPTH SELECTION. A SPECIAL FOUNDATION DESIGN IS REQUIRED FOR DOUBLE ARM STANDARDS IF THE ANGLE IS NOT 90° .

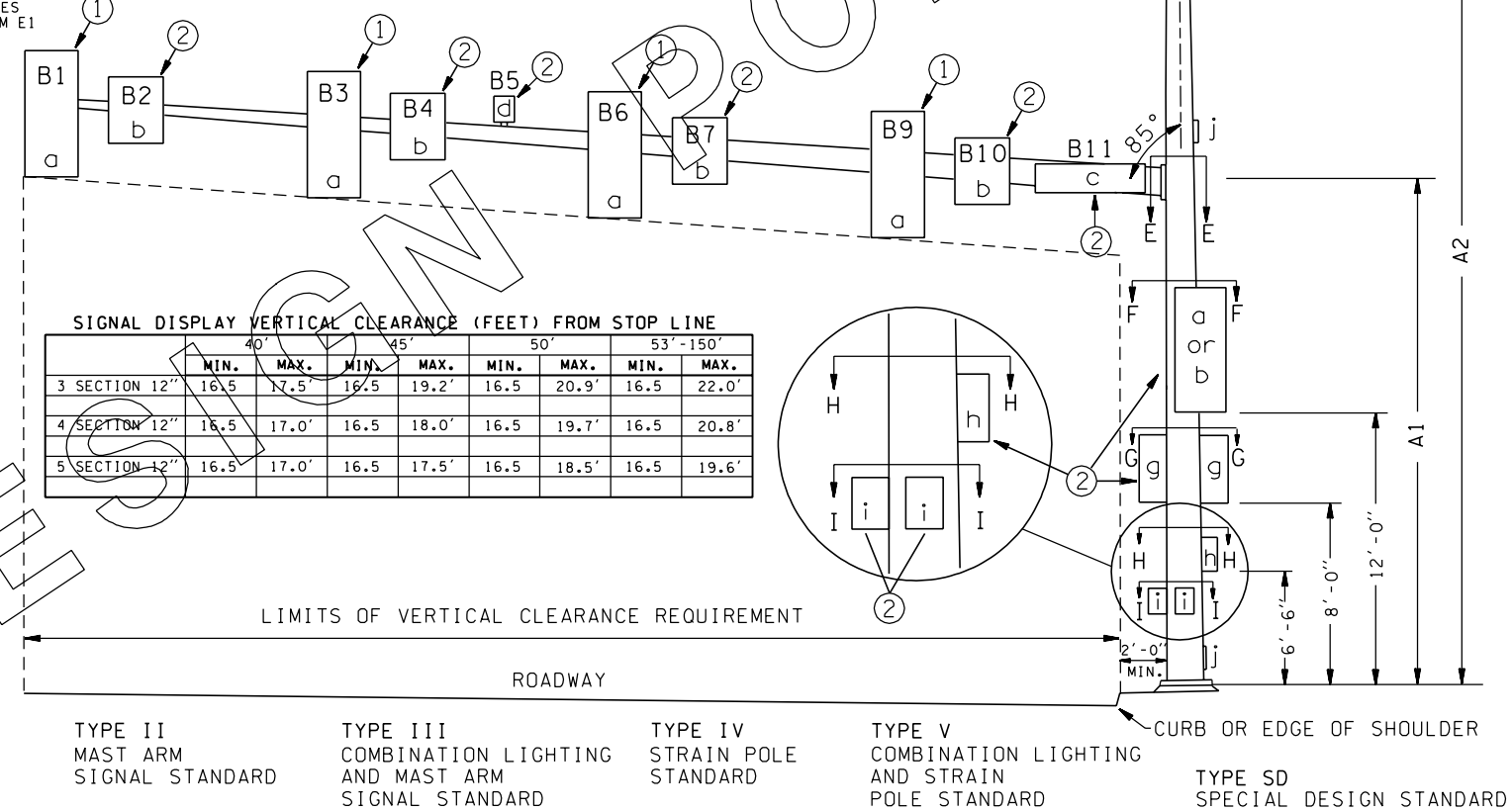


SIGNAL STANDARD IDENTIFICATION TAG DETAIL

EXAMPLE

STD. NO. XX	SIGNAL STANDARD NO.	STD. NO. 02
SRXXX, MP XXX.XX	STATE ROUTE AND	SR97, MP 069.09
MANUFACTURER	MILE POST NO.	MANUFACTURER
APPROVED DWG. XXXXXX	APPROVED DRAWING NO.	APPROVED DWG. AB12345
FAB. X/XX/XXXX	FABRICATION DATE	FAB. 6/14/2002

NOTE: CORROSION RESISTANT METAL TAG SECURED WITH (2) 0.125" RIVETS AS FOLLOWS: POLE SHAFT - LOCATED WITHIN 6" ABOVE HAND HOLE, SIGNAL AND LUMINAIRE MAST ARM - LOCATED WITHIN 6" OF THE POLE SHAFT CONNECTION POINT. TEXT SHALL BE A MINIMUM OF 3/16" HIGH, STAMPED OR EMBOSSED.



		SIGNAL DISPLAY VERTICAL CLEARANCE (FEET) FROM STOP LINE							
		40'		45'		50'		53' - 150'	
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
3	SECTION 12"	16.5	17.5'	16.5	19.2'	16.5	20.9'	16.5	22.0'
4	SECTION 12"	16.5	17.0'	16.5	18.0'	16.5	19.7'	16.5	20.8'
5	SECTION 12"	16.5	17.0'	16.5	17.5'	16.5	18.5'	16.5	19.6'

[illegible]

LEGEND

- a. Vehicle Display
- b. Sign
- c. Street Name Sign
- d. Pre-Empt Detector
- e. Deleted (10/22/90)
- f. Luminaire
- g. Pedestrian Display
- h. Cabinet
- i. PPB-M
- j. Handhole

NOTES

- ① MOUNTING COUPLING INSTALLED
AT OFFSET DISTANCE INDICATED
IN CHART.

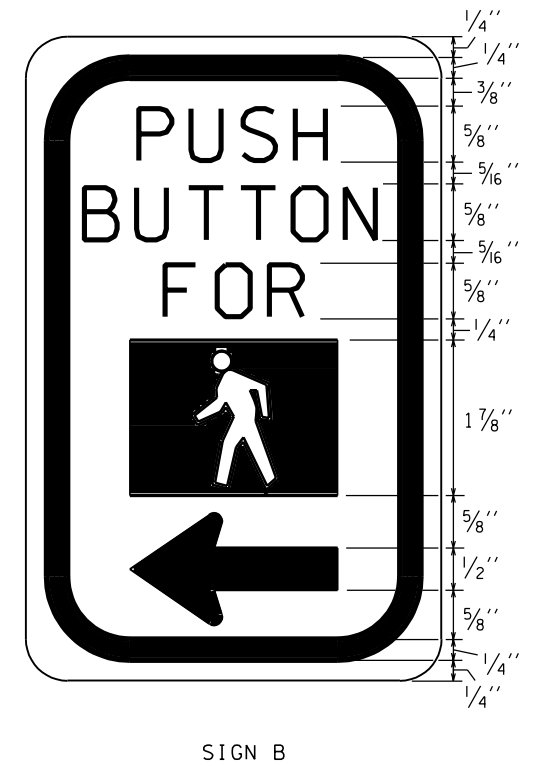
ALTERNATE NOTE 1

FOR TYPE N MOUNT ONLY

DRILL 1" HOLE IN MAST ARM AND
INSTALL PLASTIC SPLIT BUSHING
FOR CABLE ENTRANCE.

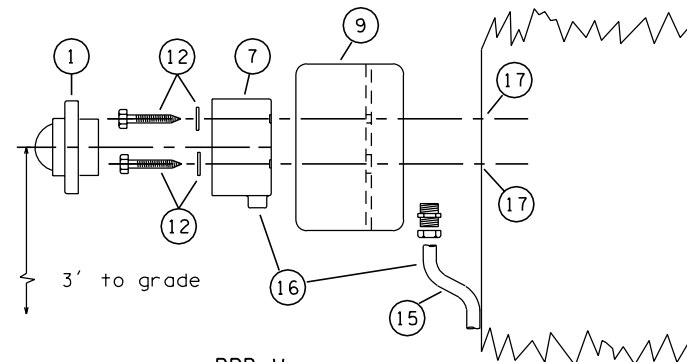
- (2) FIELD INSTALLED.

[illegible]



LETTERS SHALL BE 1/8" STROKE NON-REFLECTORIZED BLACK ENAMEL
BORDER, ARROW AND BOX SHALL BE NON-REFLECTORIZED BLACK ENAMEL
BACKGROUND AND PEDESTRIAN SHALL BE NON-REFLECTORIZED WHITE ENAMEL

- 13 DRILL & TAP SHAFT FOR 3/8" - 16 BOLT
- 14 DRILL & TAP SHAFT FOR 1/2" NIPPLE
- 15 CONDUIT & FITTINGS AS REQUIRED FOR
TIMBER POLE INSTALLATION (BOTTOM FEED)
- 16 REVERSE CONDULET AND CONDUIT FOR TOP FEED
- 17 DRILL PILOT HOLE FOR 3/8" LAG BOLT

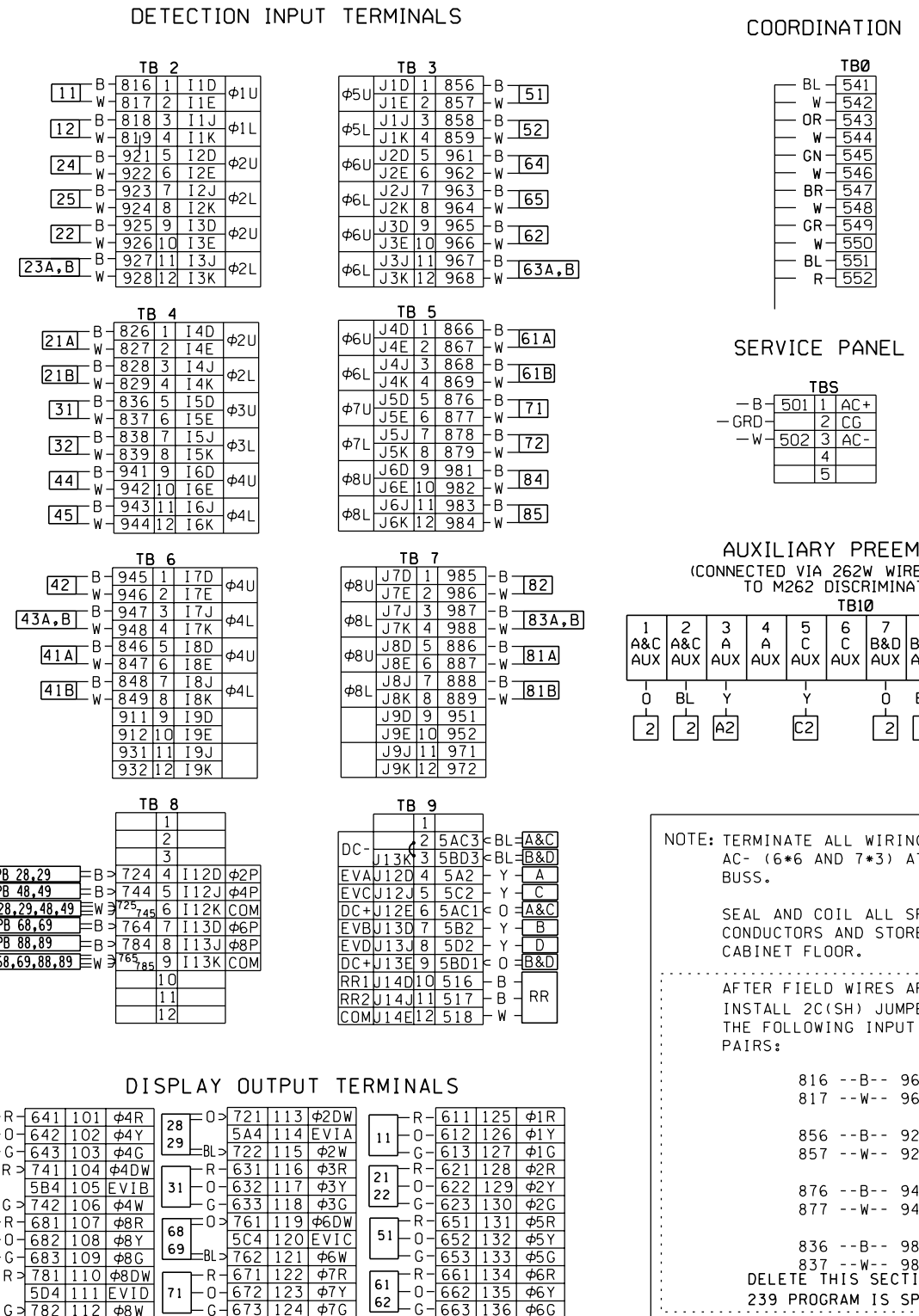


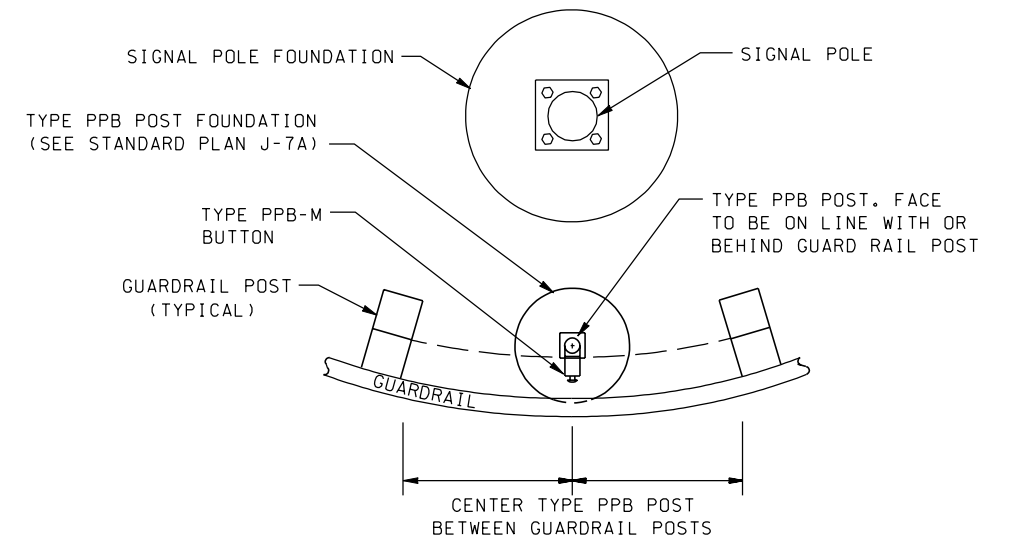
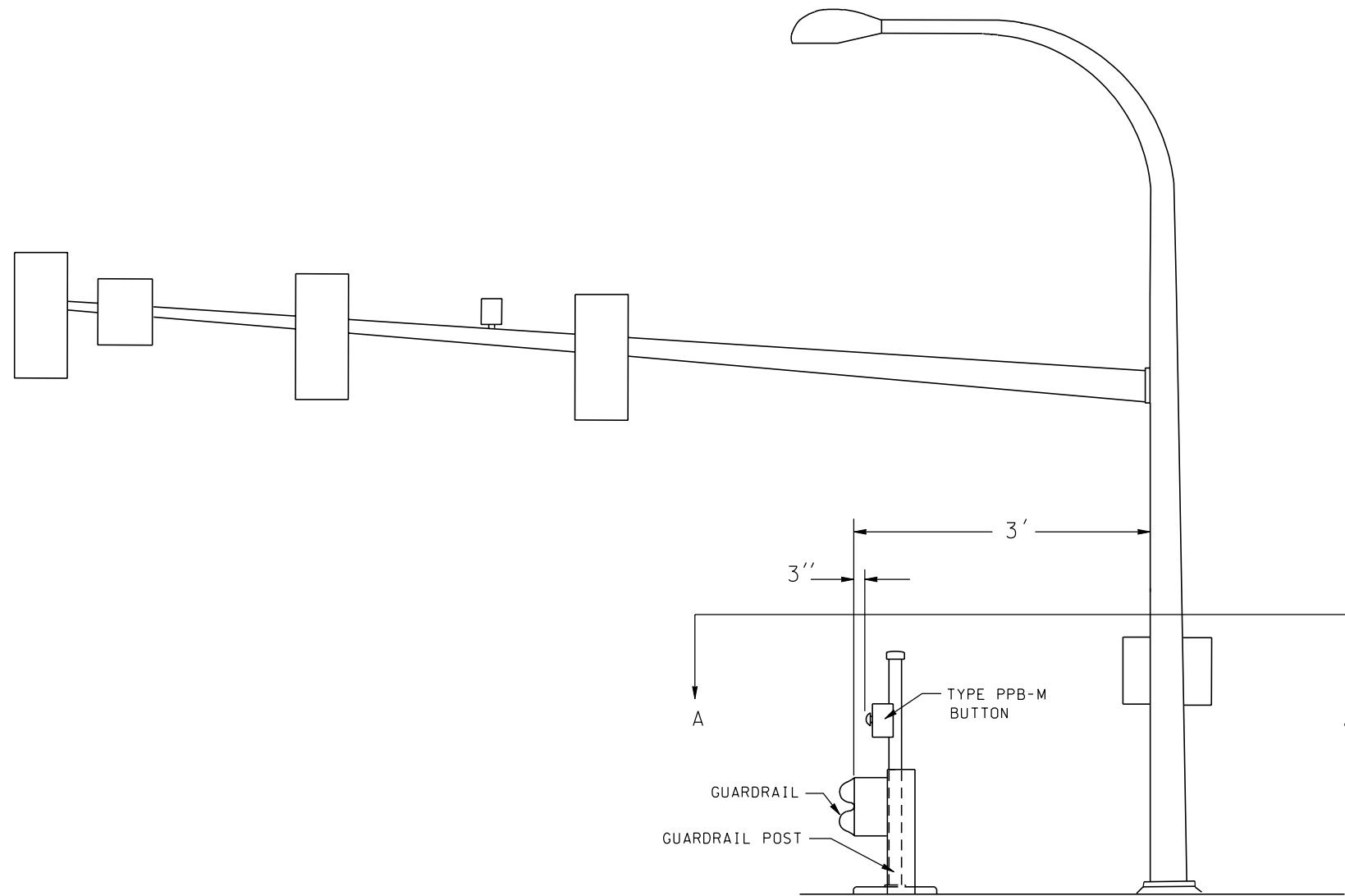
PPB-W
(PED PUSHBUTTON - WOOD POLE)
WOOD POLE INSTALLATION DETAIL (BOTTOM FEED)

- (7) CAST ALUMINUM CONDULET
- (8) ALUMINUM PLUG WITH #30 DRILLED WEEP HOLE. REMOVE TO PROVIDE WIRE ENTRANCE ON TIMBER POLE INSTALLATION
- (9) ALUMINUM 'H' EXTRUSION
- (10) CHASE NIPPLE - $\frac{7}{8}$ " HEX HEAD X $\frac{1}{2}$ " PIPE THREAD X 2 $\frac{1}{2}$ " LONG
- (11) $\frac{3}{8}$ " - 16 X 2 $\frac{1}{2}$ " STAINLESS STEEL BOLT WITH WASHER
- (12) $\frac{3}{8}$ " X 4" LAG BOLT WITH WASHER

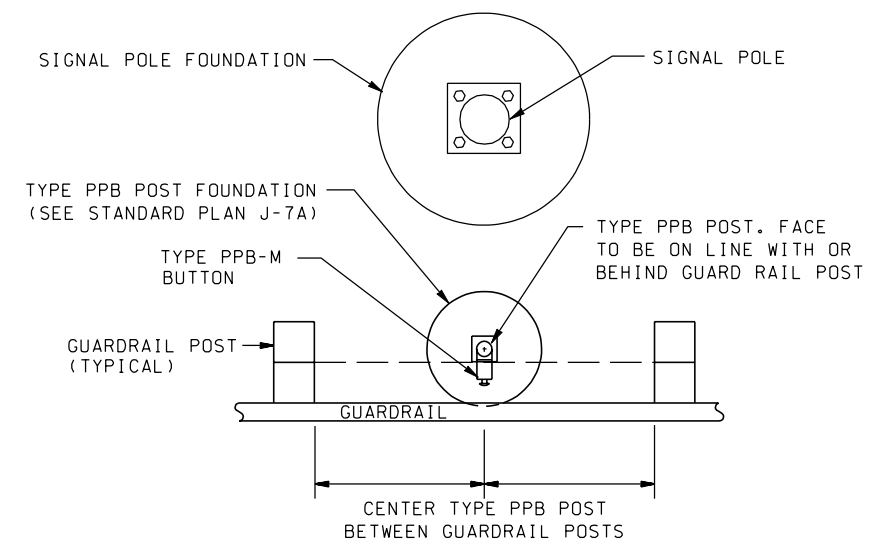
[illegible]

CABINET WIRE TERMINATIONS





SECTION A-A
(ON CURVE)



SECTION A-A

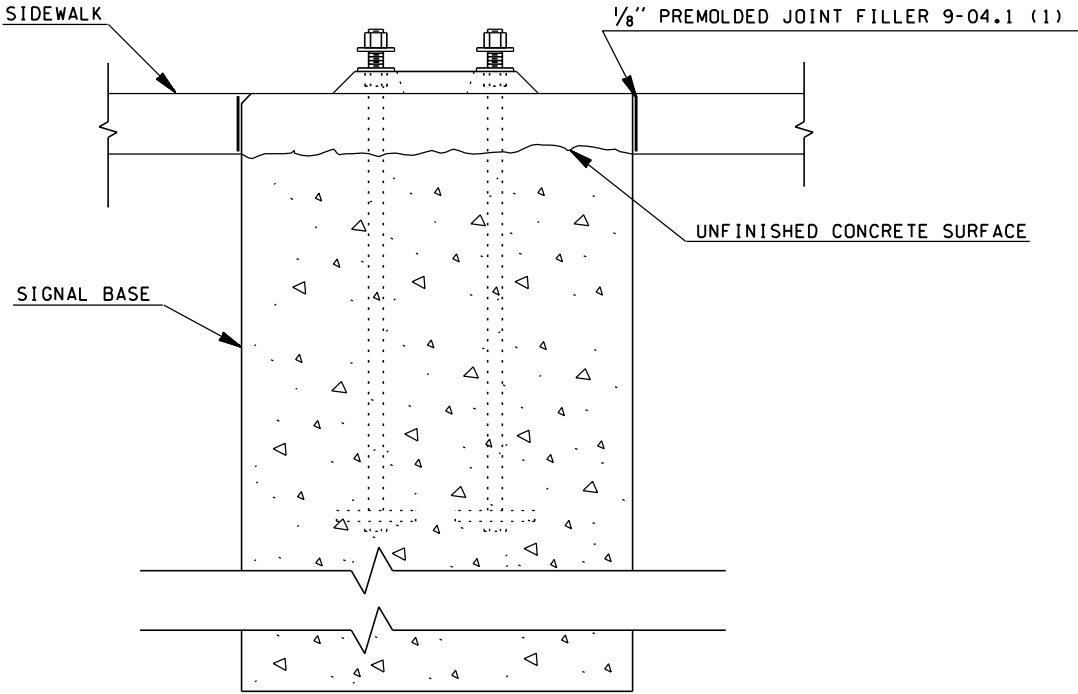
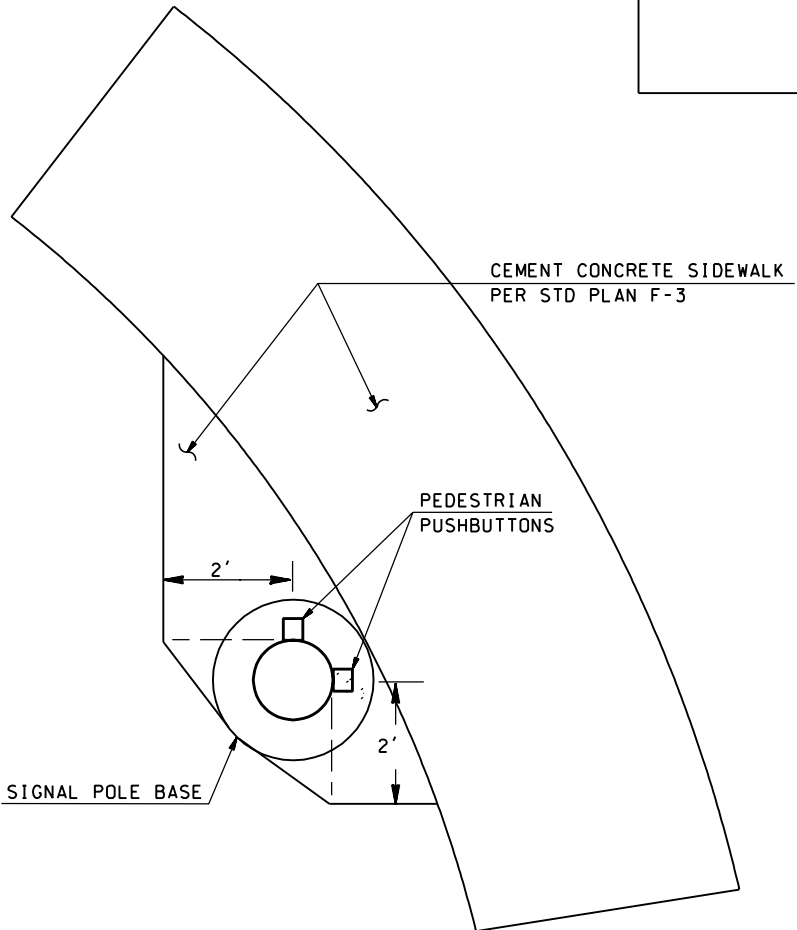
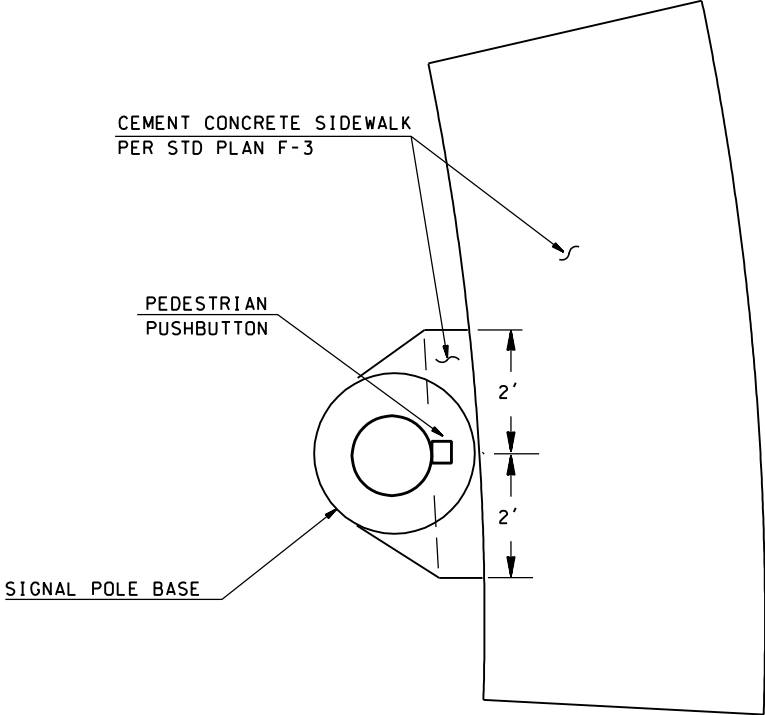
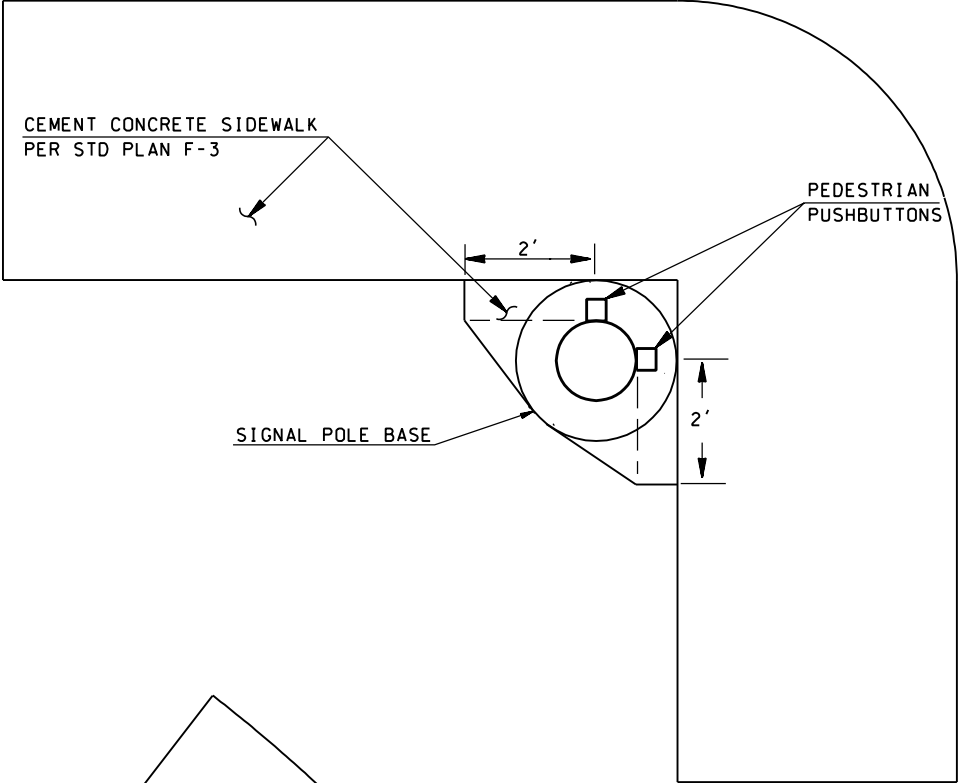
SIGNAL POLE, PEDESTRIAN PUSHBUTTON POST INSTALLATION DETAIL

FILE NAME	s:\414126\Electrical\MASTER_FILES\DETAILS\SIGNAL_E.DGN			REGION NO.	STATE	FED.AID PROJ.NO.						PLOT5
TIME	07:26:56 AM			10	WASH							2.05E
DATE	08/14/2002											
DESIGNED BY					JOB NUMBER							
ENTERED BY	WSDOT											SHEET
CHECKED BY		FIXED TEXT	2/2/99	JH	CONTRACT NO.	LOCATION NO.						OF
PROJ. ENGR.		NEW SHEET DESIGNATION	6/24/97	BK								SHEETS
REGIONAL ADM.		REVISION	DATE	BY								

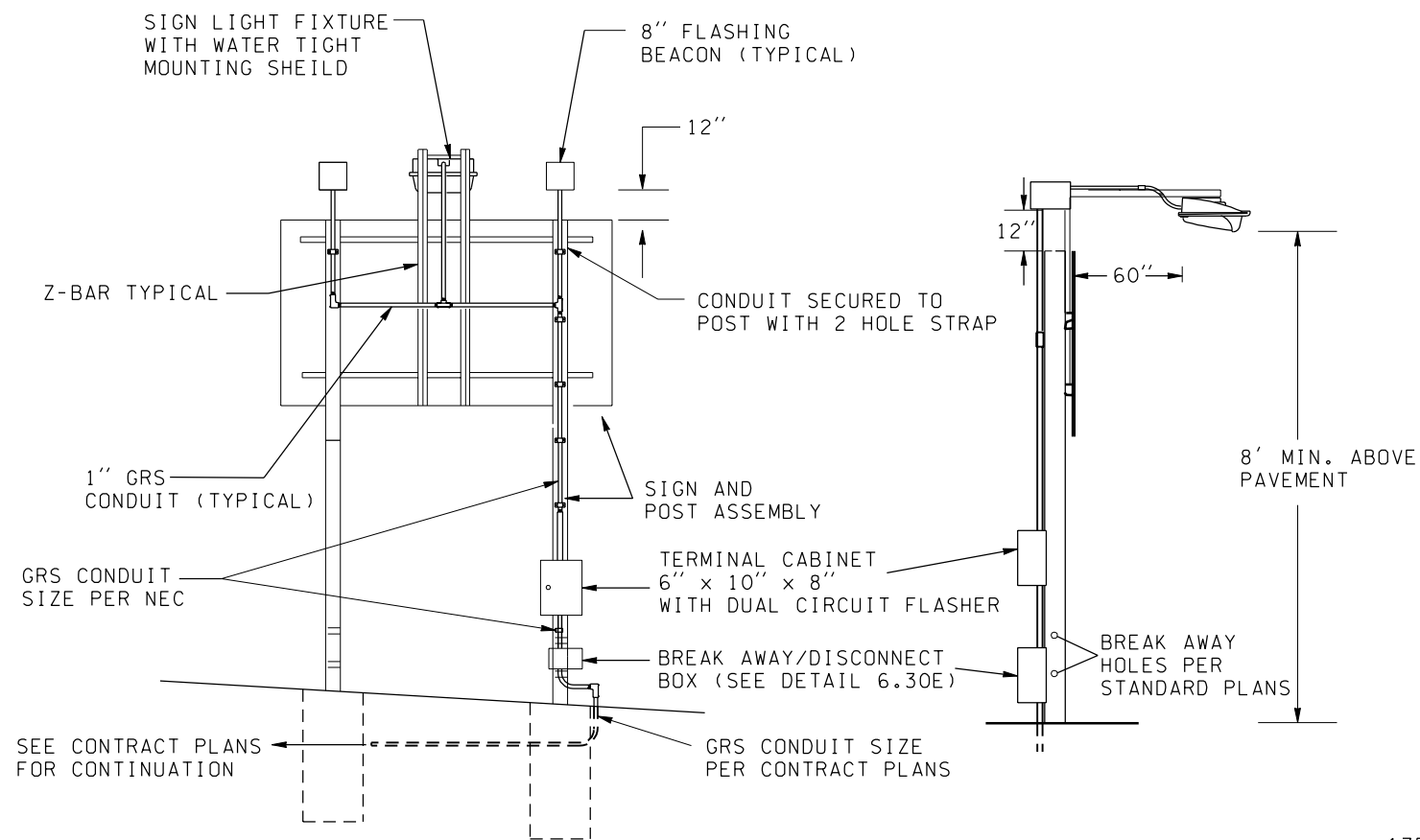


ENGLISH

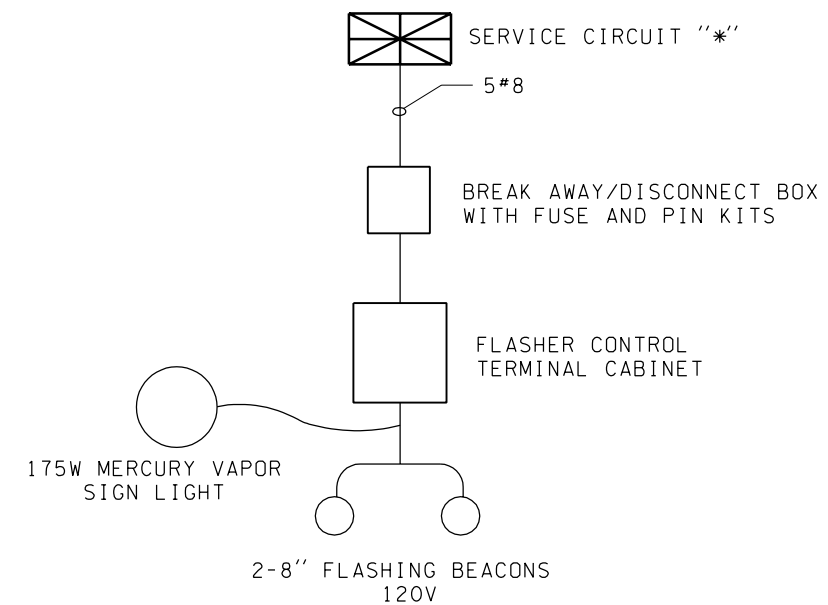
SIGNAL & PED PUSHBUTTON POLES



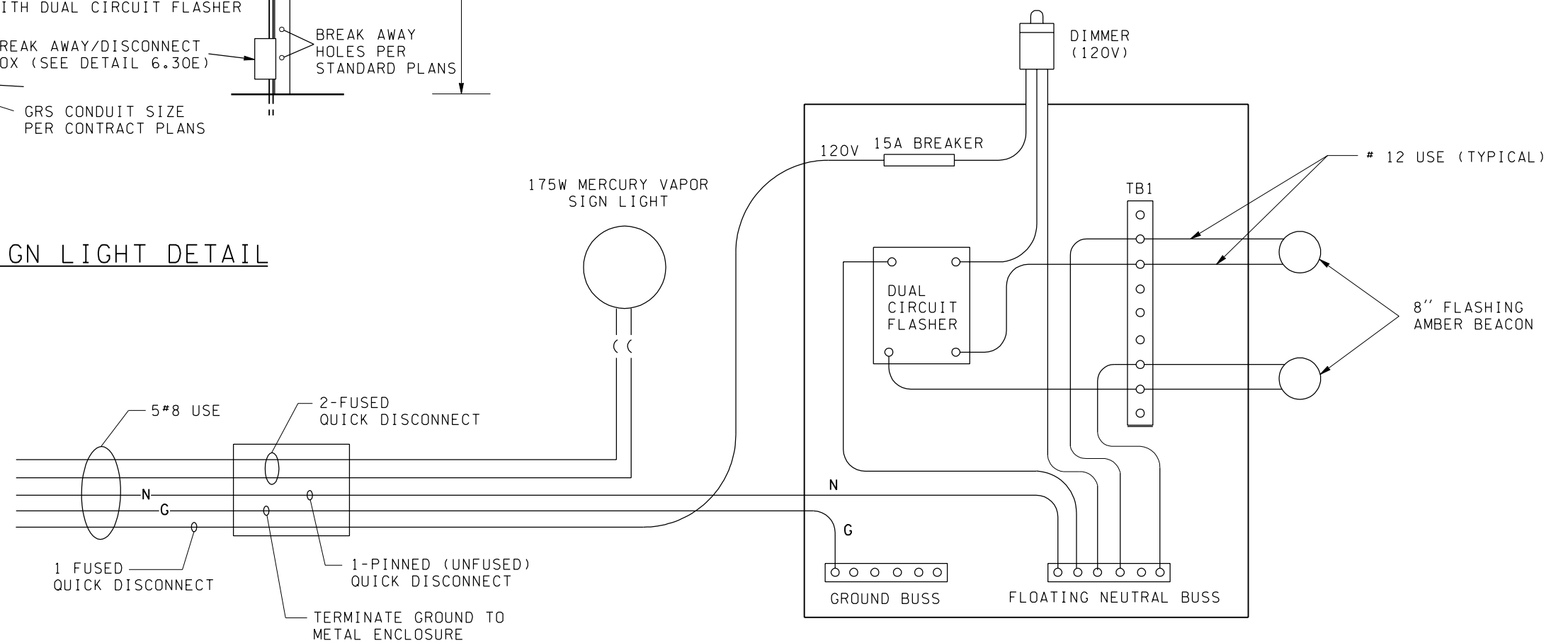
FILE NAME s:\414126\Electrical\MASTER_FILES\DETAILS\SIGNAL_E.DGN																		PLOT7	
TIME 07:27:49 AM								REGION NO.		STATE		FED.AID PROJ.NO.							
DATE 08/14/2002								10		WASH									
										JOB NUMBER									
DESIGNED BY WSDOT										JOB NUMBER		LOCATION NO.							
ENTERED BY WSDOT																			
CHECKED BY WSDOT																			
PROJ. ENGR.				NEW SHEET DESIGNATION		6/24/97		TEV		CONTRACT NO.									
REGIONAL ADM.				SIGNAL BASE DETAIL		3/19/97		TEV											
				REVISION		DATE		BY											
										DATE		DATE							
										P.E. STAMP BOX		P.E. STAMP BOX							



FLASHING BEACON/SIGN LIGHT DETAIL



WIRING/SCHEMATIC DIAGRAM

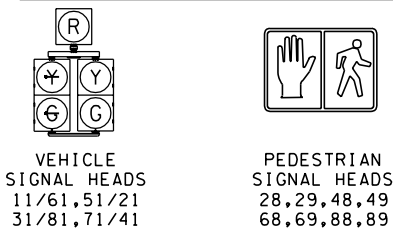


NOTE:

SEE PLANS FOR SIGN LIGHT VOLTAGE.

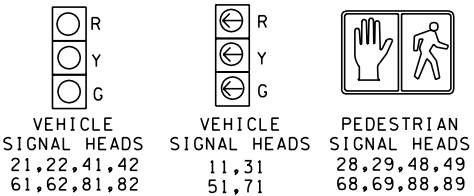
FILE NAME	S:\414126\Electrical\MASTER_FILES\DETAILS V8\flashing-beacon.dgn	REGION NO.	10	STATE	WASH	FED.AID PROJ.NO.		PLOT1
TIME	08:47:44 AM	JOB NUMBER						2.08E
DATE	10/08/2003	CONTRACT NO.				LOCATION NO.		SHEET 1 OF 1 SHEETS
DESIGNED BY								
ENTERED BY	K NGUYEN							
CHECKED BY								
PROJ. ENGR.								
REGIONAL ADM.								
	SIGN LIGHTER VOLT TO 240V/480V	10-06-03	KN					
	REVISION	DATE	BY					

SIGNAL HEAD DISPLAY NOTES



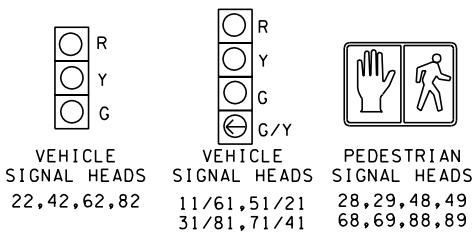
- 1 ALL VEHICLE HEADS SHALL HAVE 12” LENSES. ALL YELLOW VEHICLE HEADS SHALL BE THE CONVENTIONAL TYPE. ALL RED AND GREEN VEHICLE HEADS SHALL HAVE LED LIGHT SOURCES.
- 2 ALL VEHICLE HEADS SHALL BE INSTALLED ON TYPE “M” MOUNTING.
- 3 ALL PED HEADS SHALL BE THE LED TYPE.
- 4 DOUBLE PED HEADS SHALL BE INSTALLED ON TYPE “A” MOUNTING. SINGLE PED HEADS SHALL BE INSTALLED ON TYPE “B” MOUNTING.
- 5 ALL VEHICLE HEADS SHALL HAVE BACKPLATES.

SIGNAL HEAD DISPLAY NOTES



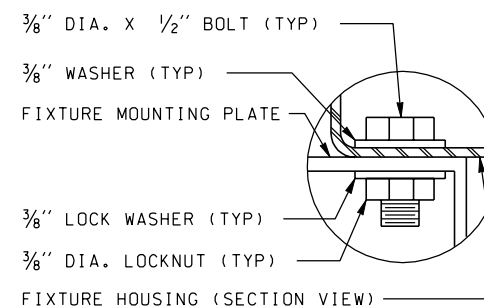
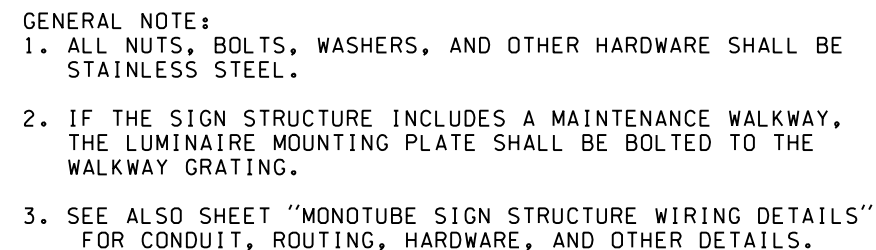
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- 2 ALL VEHICLE HEADS SHALL BE INSTALLED ON TYPE “M” MOUNTING.
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SIGNAL HEAD DISPLAY NOTES

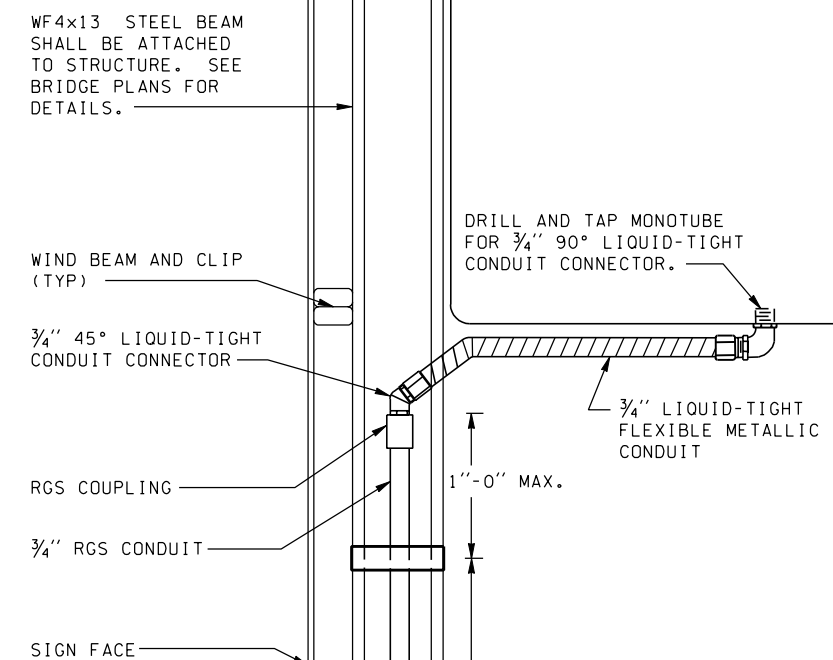


- 1 ALL VEHICLE HEADS SHALL HAVE 12” LENSES. ALL YELLOW VEHICLE HEADS SHALL BE THE CONVENTIONAL TYPE. ALL RED AND GREEN VEHICLE HEADS SHALL HAVE LED LIGHT SOURCES. THE G/Y FOURTH SECTION LENSE SHALL BE FIBER OPTIC.
- 2 ALL VEHICLE HEADS SHALL BE INSTALLED ON TYPE “M” MOUNTING.
- 3 ALL PED HEADS SHALL BE THE LED TYPE.
- 4 DOUBLE PED HEADS SHALL BE INSTALLED ON TYPE “A” MOUNTING. SINGLE PED HEADS SHALL BE INSTALLED ON TYPE “B” MOUNTING.
- 5 ALL VEHICLE HEADS SHALL HAVE BACKPLATES.

FILE NAME C:\AAWork\sigheadnotes.dgn				REGION NO.	STATE	FED.AID PROJ.NO.				Washington State Department of Transportation		PLOT1
TIME	02:41:29 PM			10	WASH							
DATE	07/15/2002			JOB NUMBER								
DESIGNED BY				CONTRACT NO.		LOCATION NO.						SHEET
ENTERED BY												OF
CHECKED BY												SHEETS
PROJ. ENGR.												
REGIONAL ADM.		REVISION	DATE	BY								

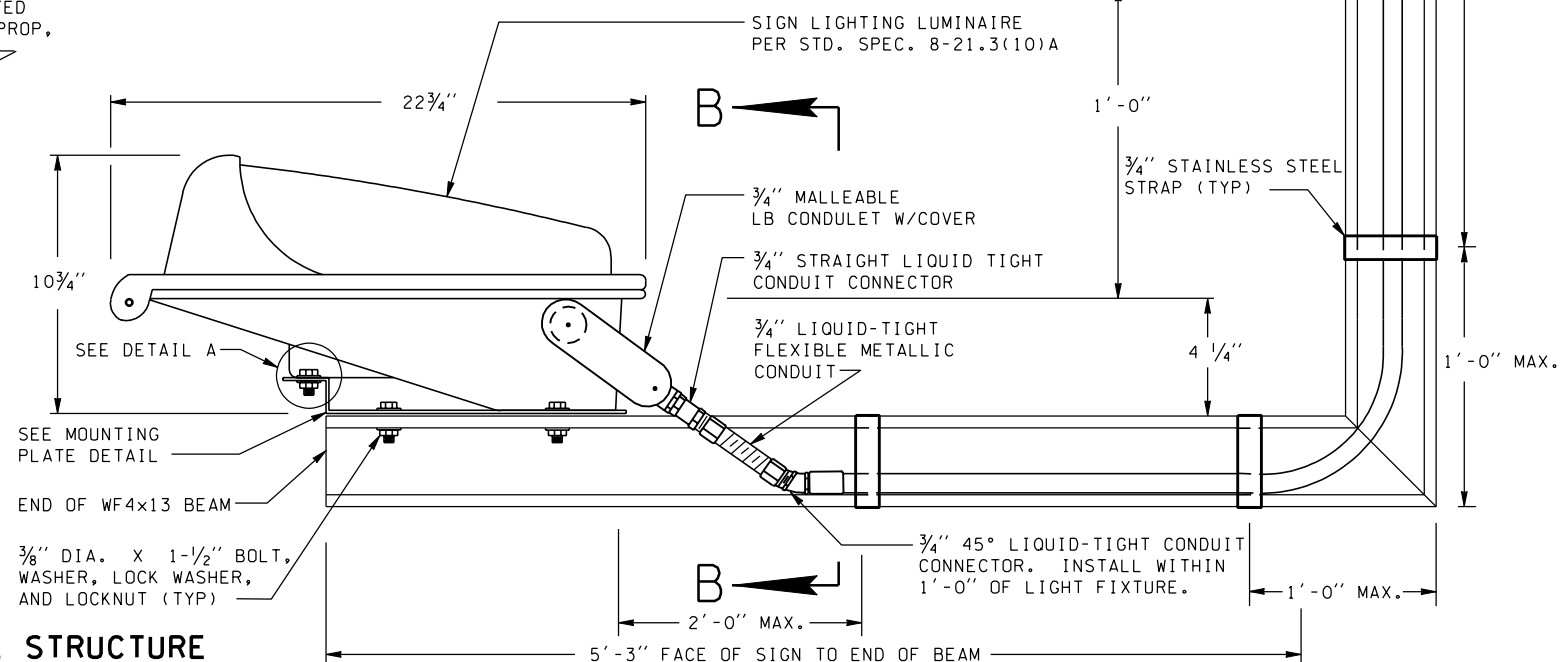


DETAIL A



SIGN LIGHTING FIXTURE MOUNTING PLATE DETAIL


ITEM AVAILABLE FROM FIXTURE MANUFACTURER.
MATERIAL IS GALV. 10 GAGE STEEL PLATE.



SIGN LIGHT MOUNTING DETAILS FOR MONOTUBE STRUCTURE

(NOT TO SCALE)

FILE NAME s:\414126\Electrical\MASTER_FILES\DETAILS\signlighters.s_e.dgn										PLOT1									
TIME 10:50:01 AM						REGION NO.		STATE		FED.AID PROJ.NO.									
DATE 09/11/2002						10		WASH											
DESIGNED BY						JOB NUMBER				LOCATION NO.									
ENTERED BY				5-15-02															
CHECKED BY		¾" CONDUIT CONNECT. ADDED		1-08-01		JH		CONTRACT NO.											
PROJ. ENGR.		DIM. CHNG TO SIGN		12-12-00		JH													
REGIONAL ADM.		REVISION		DATE		BY													



Washington State
Department of Transportation

ENGLISH

SIGN LIGHT MOUNTING DETAILS
FOR MONOTUBE STRUCTURE

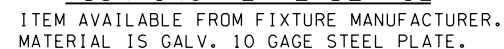
SHEET 1 OF 2

3.01E

SHEET

OF

SHEETS



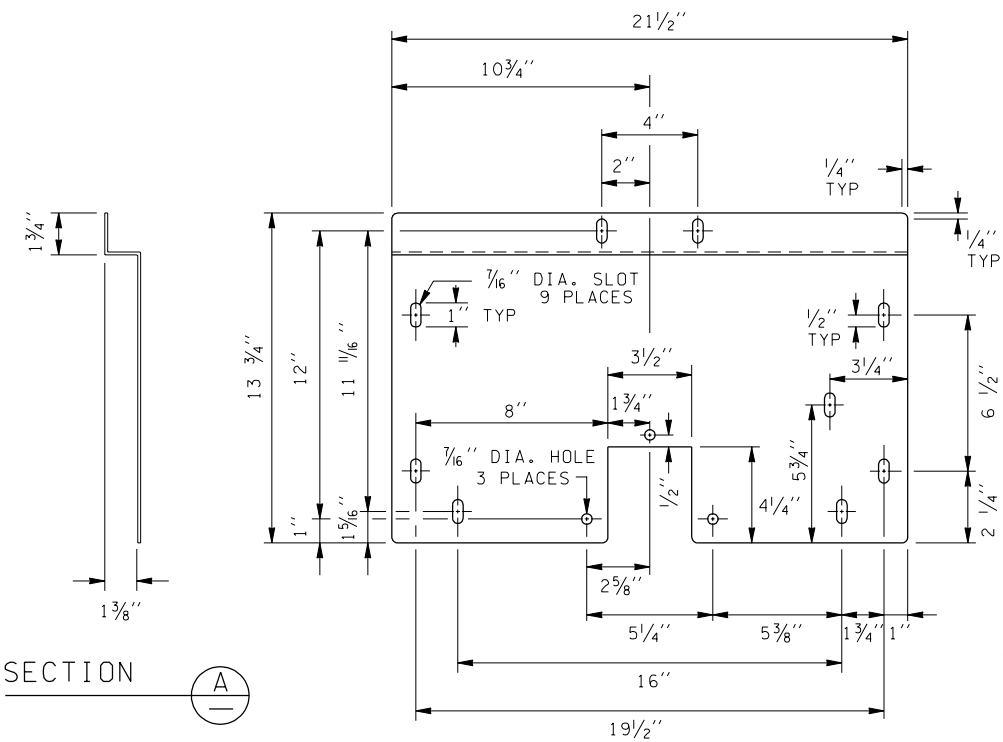
1" - 0" MAX.



PLOT22
3.20E
SHEET
OF
SHEETS

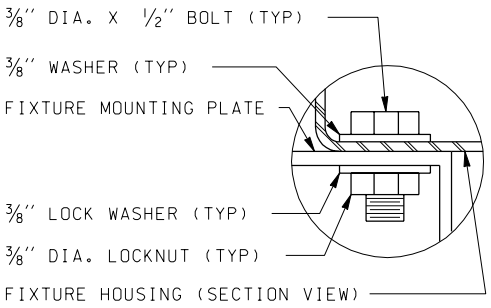
GENERAL NOTES:

1. ALL NUTS, BOLTS, WASHERS, AND OTHER HARDWARE SHALL BE STAINLESS STEEL.
2. IF THE SIGN STRUCTURE INCLUDES A MAINTENANCE WALKWAY, THE LUMINAIRE MOUNTING PLATE SHALL BE BOLTED TO THE WALKWAY GRATING.
3. SEE ALSO THE SHEET FOR "CONDUIT ROUTING DETAILS FOR CONDUIT, ROUTING, HARDWARE, AND OTHER DETAILS.

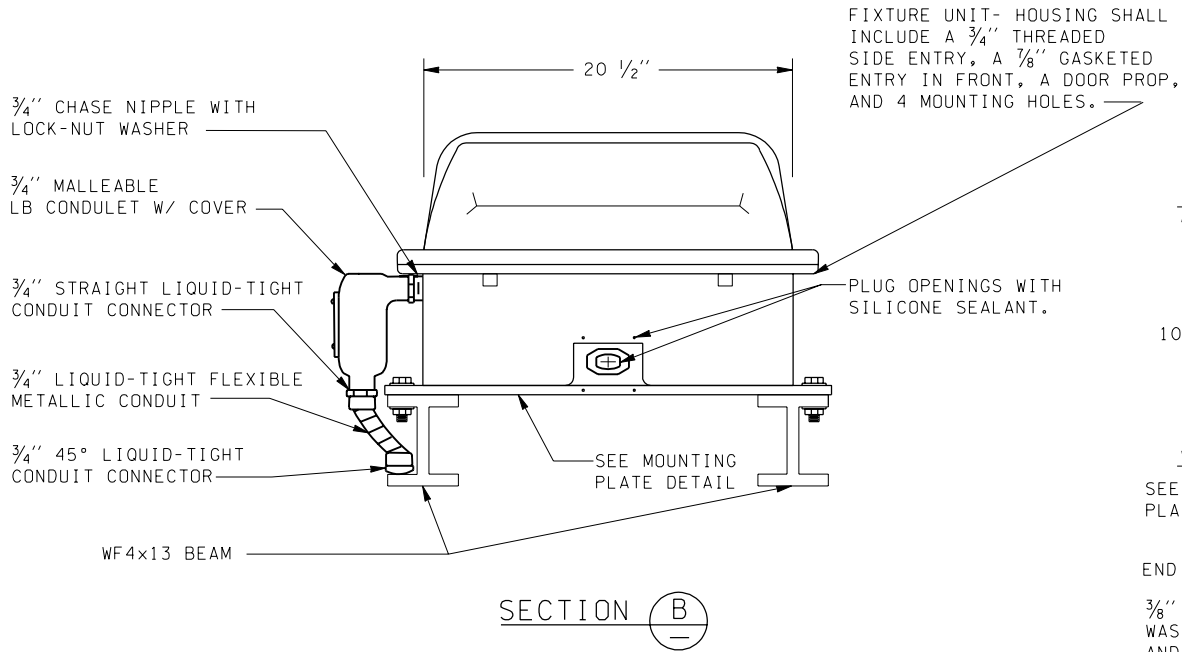


SIGN LIGHTING FIXTURE MOUNTING PLATE DETAIL

ITEM AVAILABLE FROM FIXTURE MANUFACTURER.
MATERIAL IS GALV. 10 GAGE STEEL PLATE.

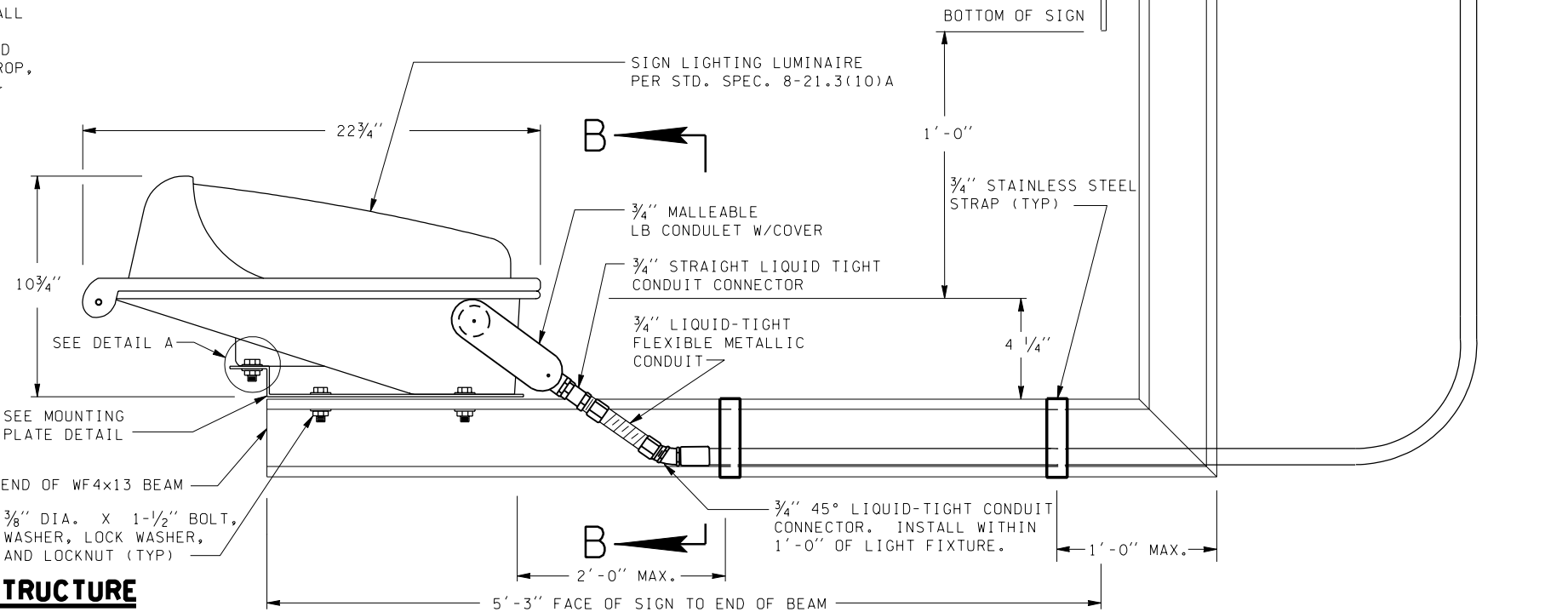



DETAIL A

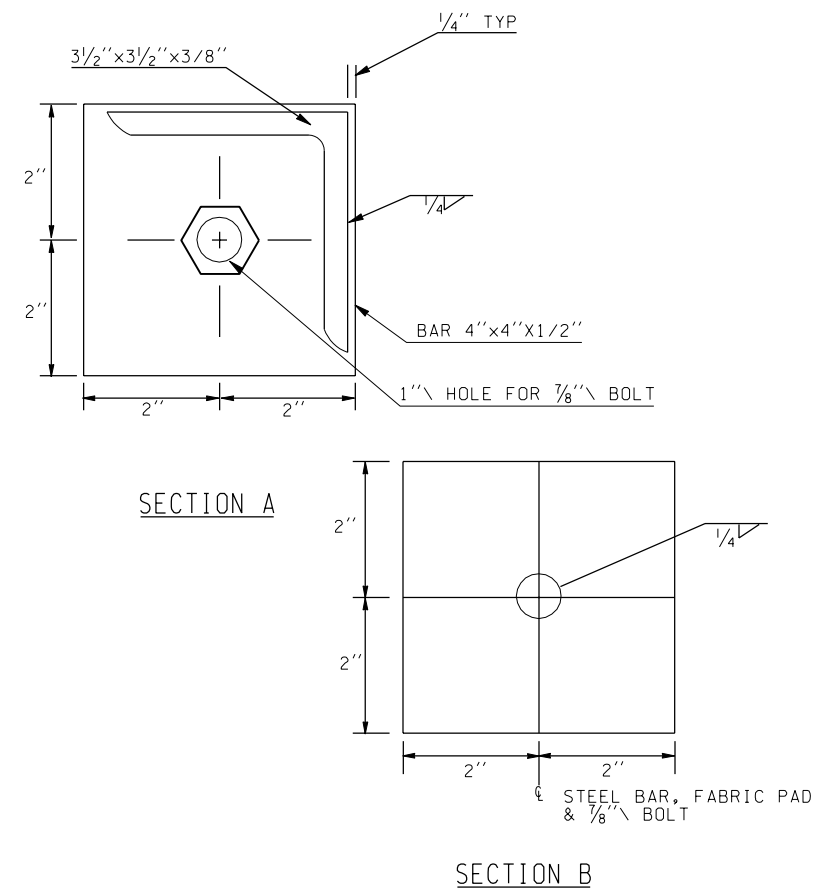
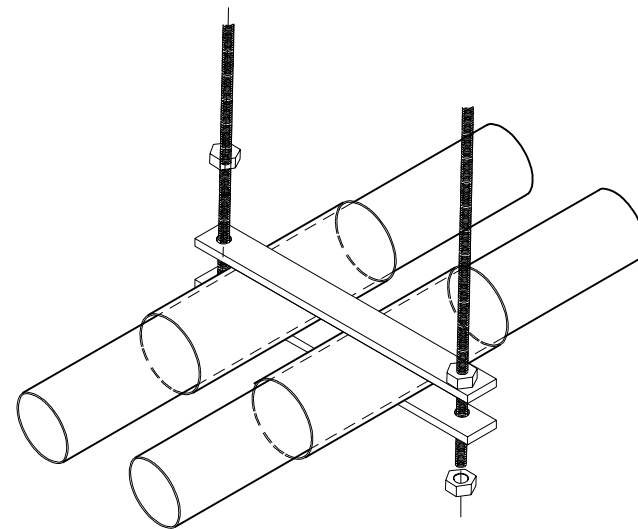
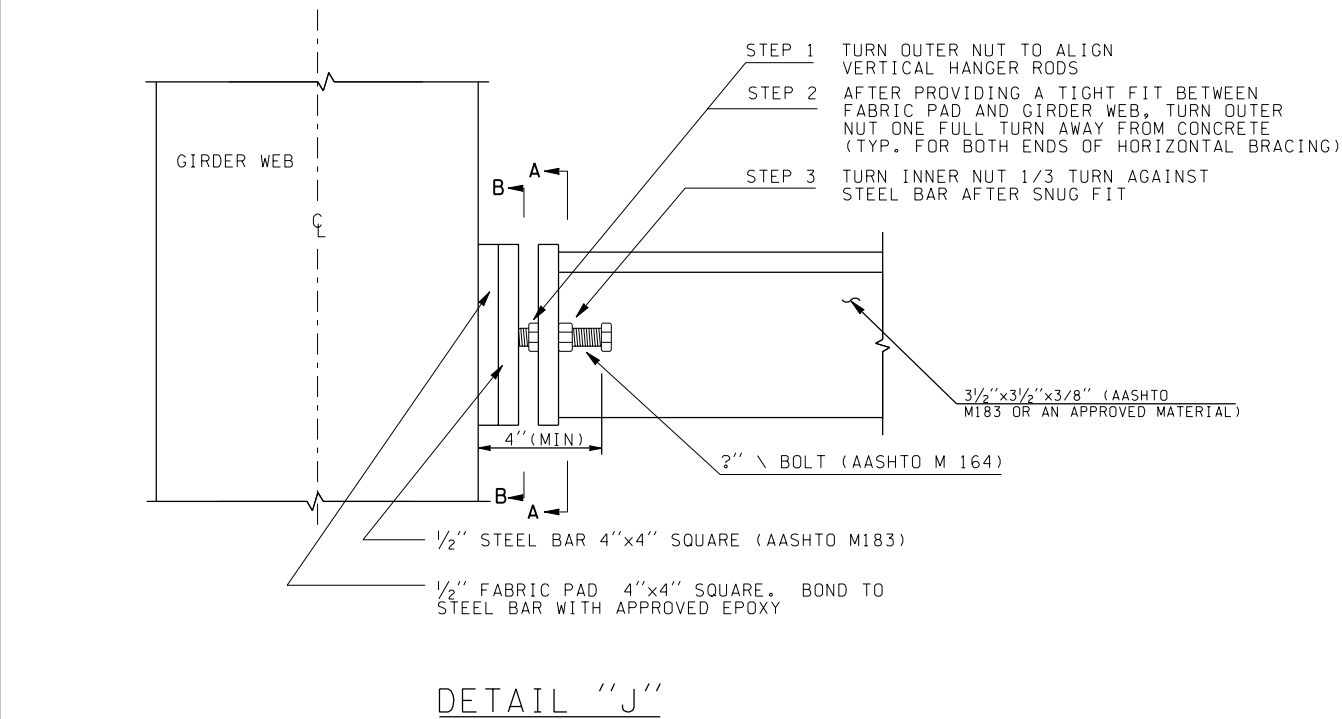
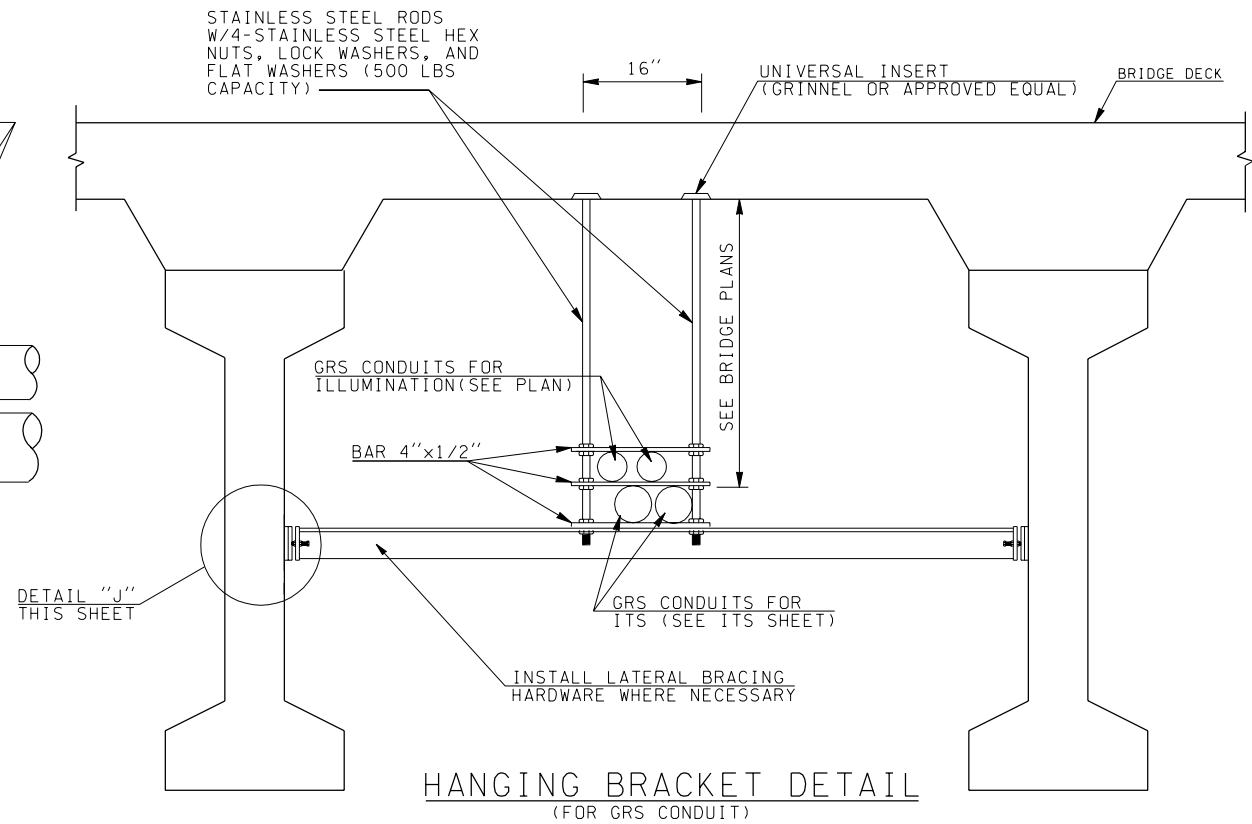
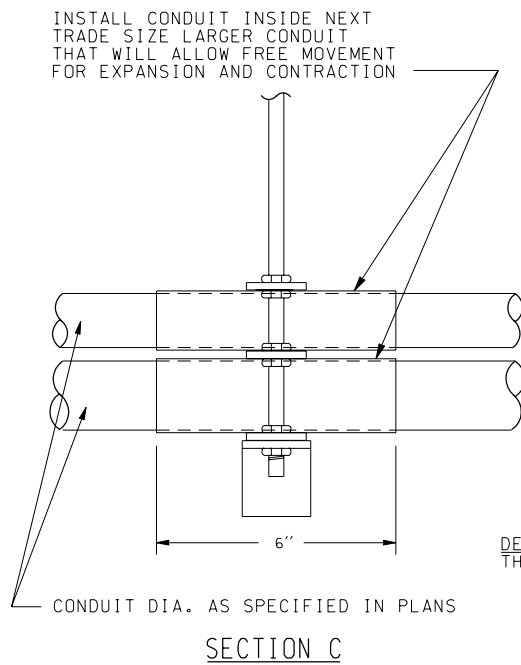
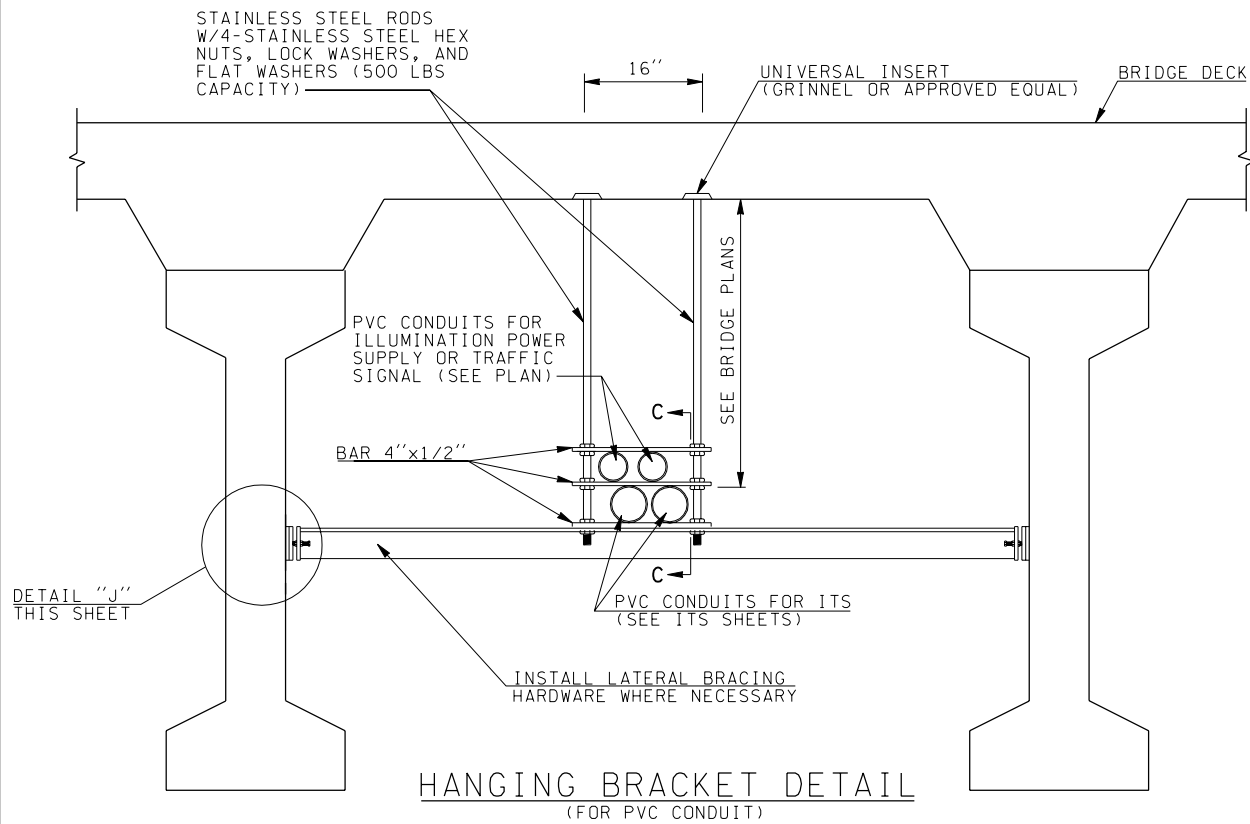



SIGN LIGHT MOUNTING DETAILS FOR TRUSS STRUCTURE

(NOT TO SCALE)

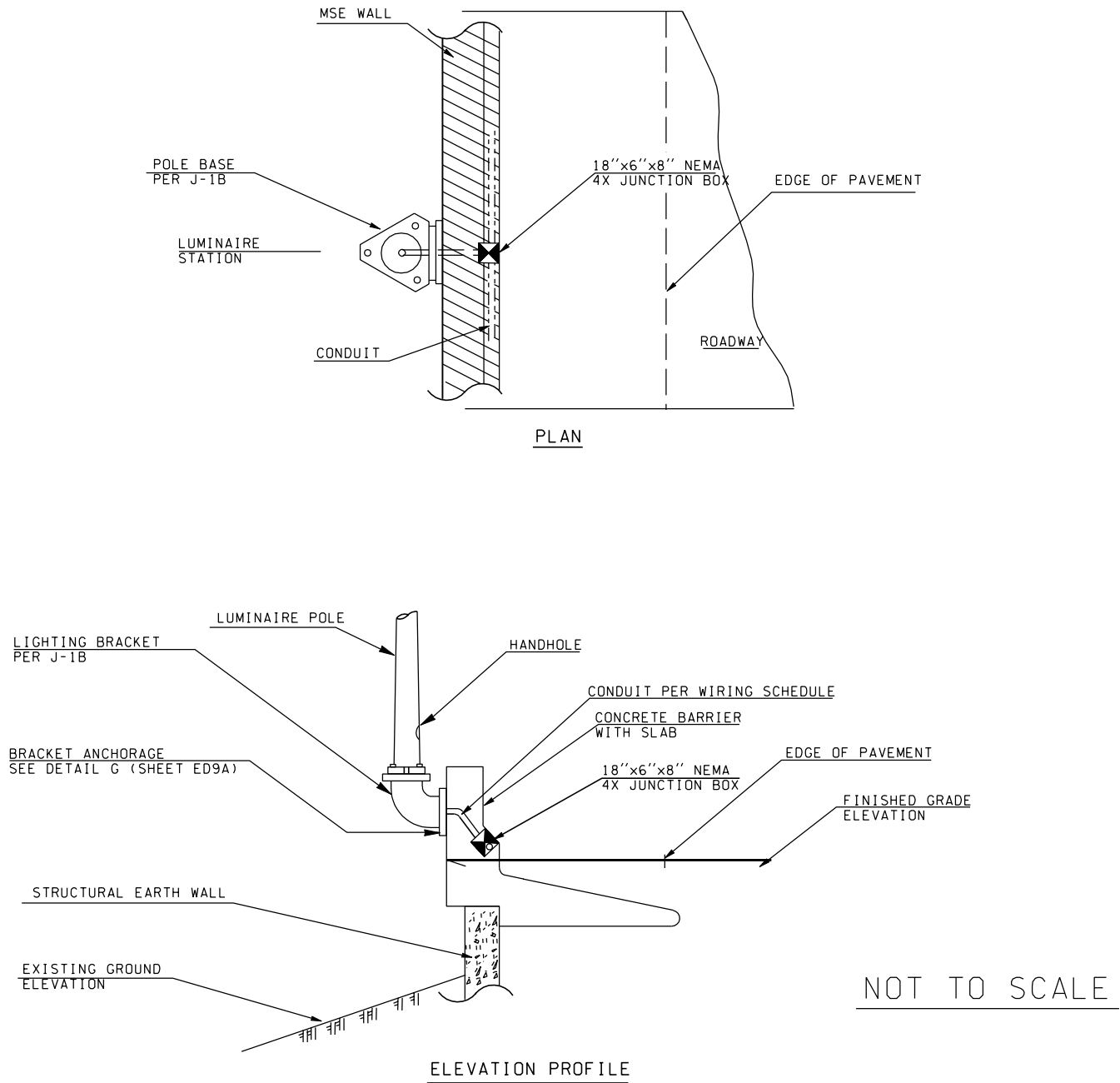


FILE NAME	S:\414126\Electrical\MASTER_FILES\DETAILS_V8\signlighters.e.dgn	REGION NO.	10	STATE	WASH	FED.AID PROJ.NO.			ENGLISH SIGN LIGHT MOUNTING DETAILS FOR TRUSS STRUCTURE	PLOT11
TIME	07:05:27 AM									4.01E
DATE	02/10/2004									
DESIGNED BY										
ENTERED BY	3/4" RGS CONDUIT NOTE	3-1-01	JH							SHEET
CHECKED BY	GENERAL NOTE CHANGE	1-08-01	JH							OF
PROJ. ENGR.	REMOVED S.S. STRAP, DIM. CHNG.	12-12-00	JH							SHEETS
REGIONAL ADM.	REVISION	DATE	BY						SHEET 1 OF 2	



FILE NAME N:\wsdot\Regions\Northwest\Traffic\ElectricalDesign\master\dgn&zip\UNISTRUT_E.dgn									 Washington State Department of Transportation		ILLUMINATION DETAILS		PLOT2
TIME 04:21:02 PM					REGION NO.	STATE	FED.AID PROJ.NO.						5.01E
DATE 08/13/2003					10	WASH							
					JOB NUMBER								
DESIGNED BY		PVC ADDED, SEC 'C' DET. ADDED	7/17/03	JH									
ENTERED BY		NEW SHEET PLACEMENT	4/15/03	JH									SHEET
CHECKED BY		REMOVED UNISTRUT DET.	11-15-00	JH	CONTRACT NO.		LOCATION NO.						OF
PROJ. ENGR.		FIXED ENGLISH UNITS	12-9-98	EM									SHEETS
REGIONAL ADM.		REVISION	DATE	BY					P.E. STAMP BOX		DATE		ENGLISH
									P.E. STAMP BOX		DATE		






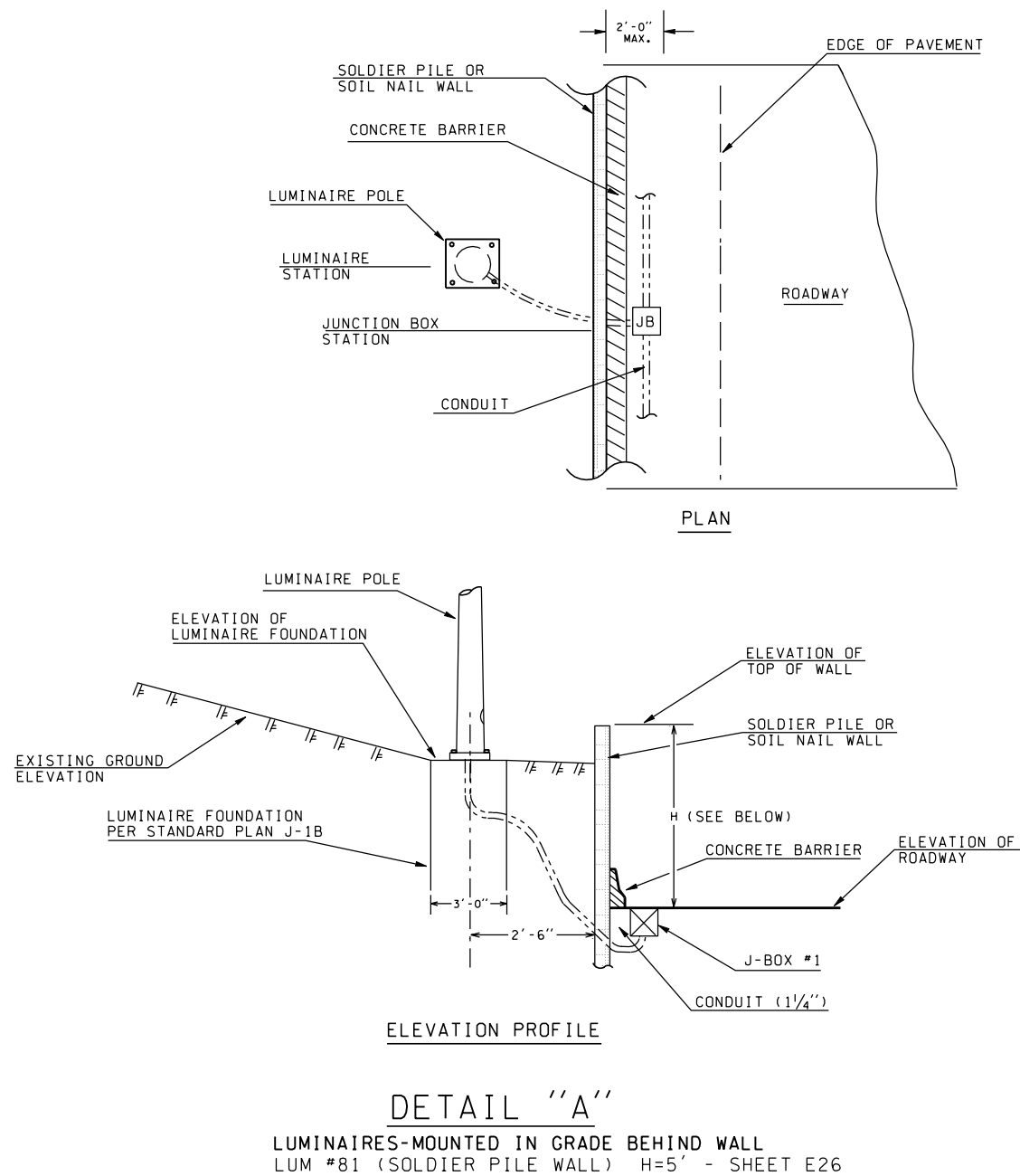
- NOTES:
1. SEE BRIDGE PLANS FOR WALL CONSTRUCTION AND POLE BASE ATTACHMENT DETAILS.
 2. FOR BRACKET ANCHORAGE DETAILS SEE SHEET ED9A.
 3. CHECK WALL FOR LUMINAIRE LOADINGS.

DETAIL "E"

LUMINAIRES ON BARRIER-MOUNTED ON STRUCTURAL EARTH WALL (SEW)

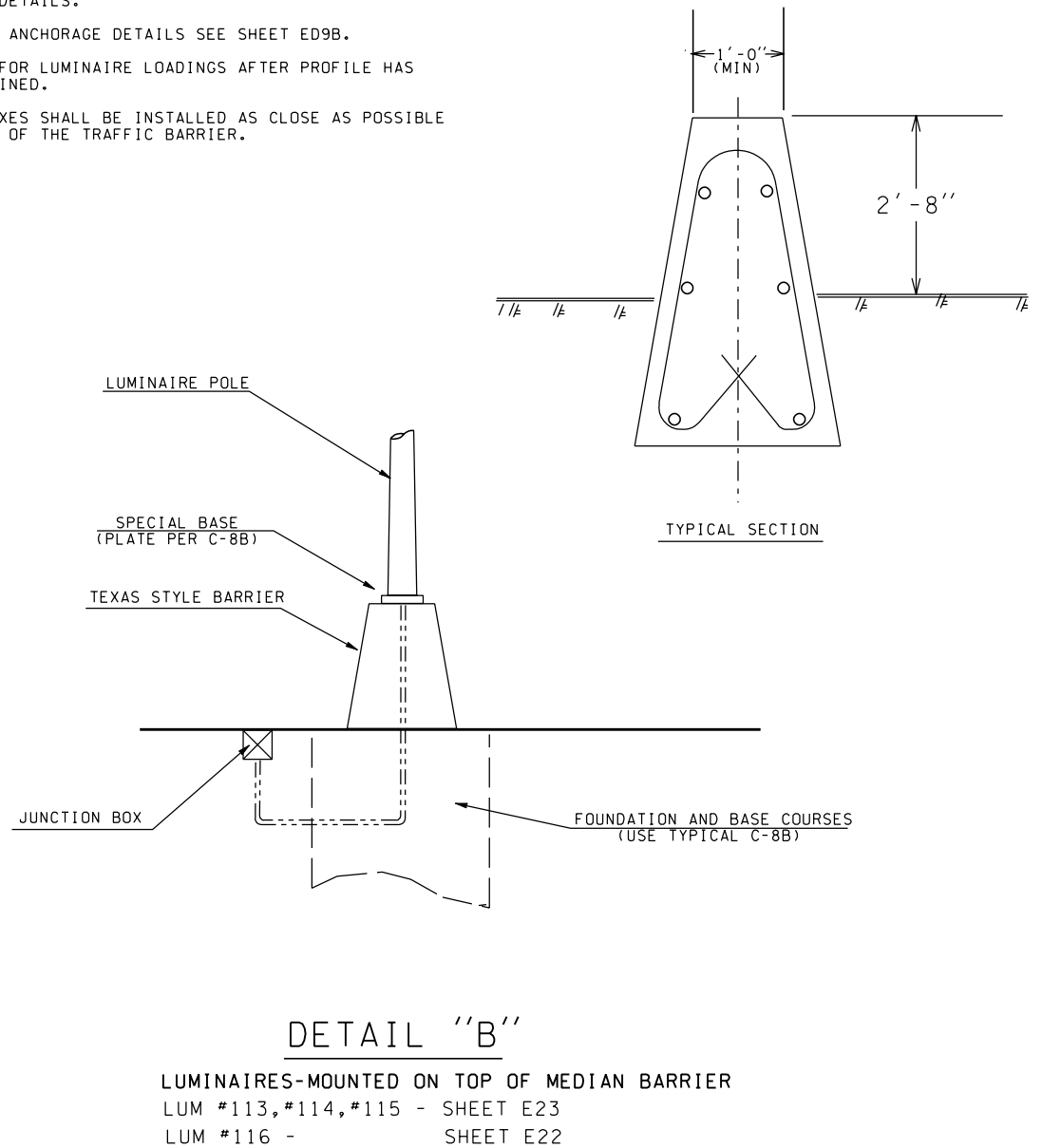
LUM #45	-	SHEET E23 (WALL 11)
LUM #95, #97, #117, #118	-	SHEET E22 (WALL 10)
LUM #100	-	SHEET E23 (WALL 11)
LUM #112	-	SHEET E23 (WALL 10)
LUM #103	-	SHEET E23 (WALL 3)
LUM #151	-	SHEET E29 (WALL 17)
LUM #156	-	SHEET E31 (WALL 19)
LUM #152	-	SHEET E30 (WALL 17)
LUM #158, #161, #172	-	SHEET E31 (WALL 25)

					REGION NO.	STATE	FED.AID PROJ.NO.	ENVIRONMENTAL AND ENGINEERING SERVICE CENTER	 Washington State Department of Transportation	ENGLISH	502E
DESIGNED BY					10	WASH					
ENTERED BY					JOB NUMBER					OF	
CHECKED BY					CONTRACT NO.					SHEETS	
PROJ. ENGR.											
REGIONAL ADM.		2/2/99	FIXED TEXT	JH							
	DATE	DATE	REVISION	BY						ILLUMINATION DETAILS	




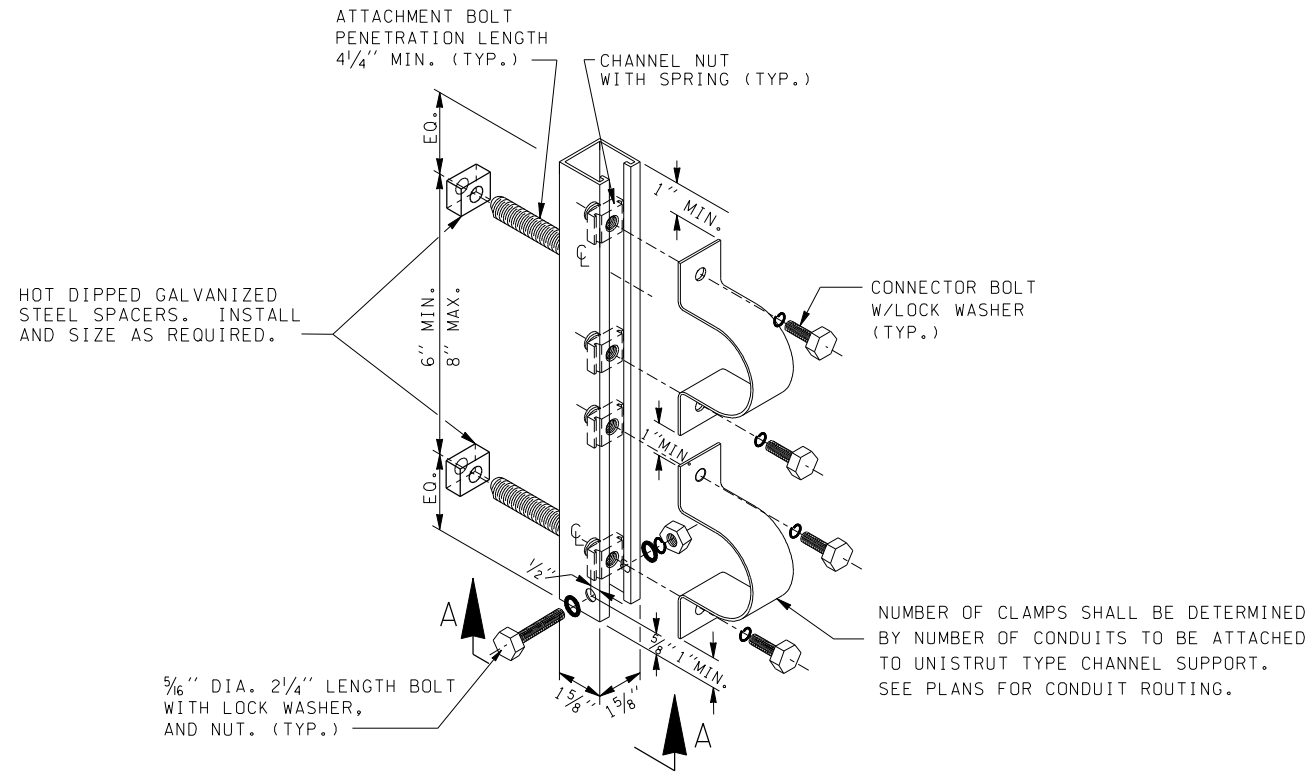
NOTES:

1. SEE BRIDGE PLANS FOR WALL CONSTRUCTION AND POLE BASE ATTACHMENT DETAILS.
2. FOR BRACKET ANCHORAGE DETAILS SEE SHEET ED9B.
3. CHECK WALL FOR LUMINAIRE LOADINGS AFTER PROFILE HAS BEEN DETERMINED.
4. JUNCTION BOXES SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE FACE OF THE TRAFFIC BARRIER.

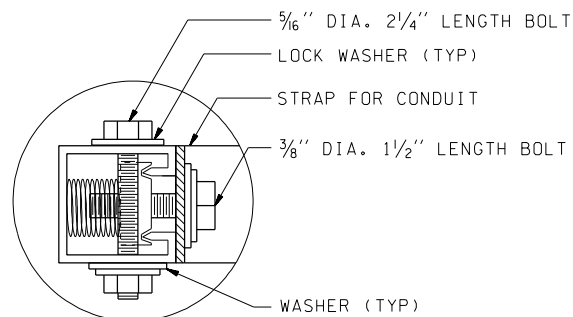


NOT TO SCALE

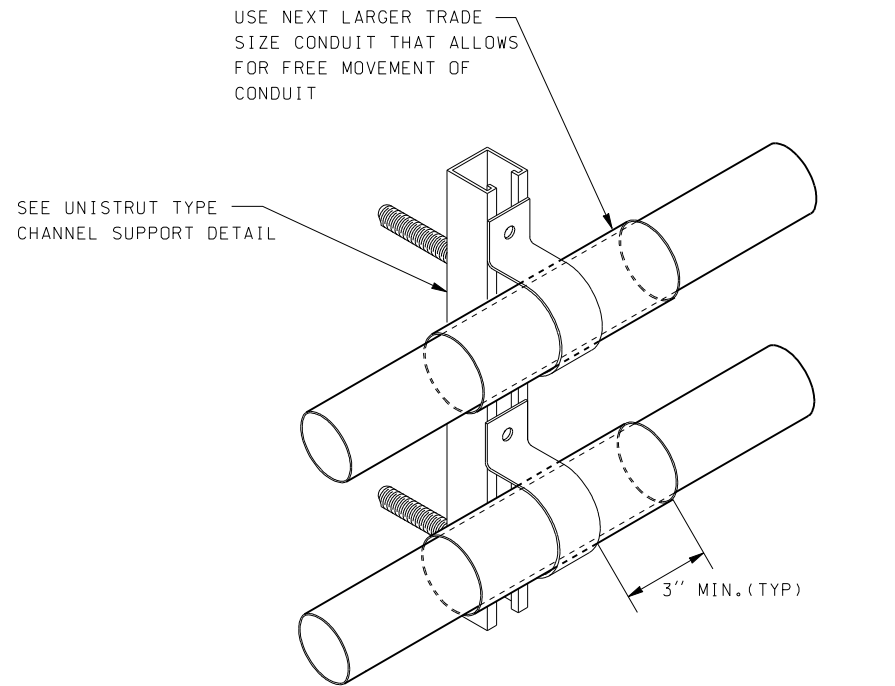
					REGION NO.	STATE	FED.AID PROJ.NO.	ENVIRONMENTAL AND ENGINEERING SERVICE CENTER	 Washington State Department of Transportation	ENGLISH	503E
DESIGNED BY					10	WASH					
ENTERED BY					JOB NUMBER					OF	
CHECKED BY					CONTRACT NO.					SHEETS	
PROJ. ENGR.											
REGIONAL ADM.		2/2/99	FIXED TEXT	JH							
	DATE	DATE	REVISION	BY				ILLUMINATION DETAILS			



UNISTRUT TYPE CHANNEL SUPPORT DETAIL



DETAIL A



PVC CONDUIT SUPPORT DETAIL
(FOR UTILITY COMPANY USE - ONLY ALLOWED IN RARE INSTANCES)

NOTES

MOUNTING HARDWARE DETAILS ARE PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY. THE CONTRACTOR MAY PROPOSE GEOMETRIC ATTACHMENT MODIFICATIONS, SUBJECT TO APPROVAL BY THE ENGINEER.

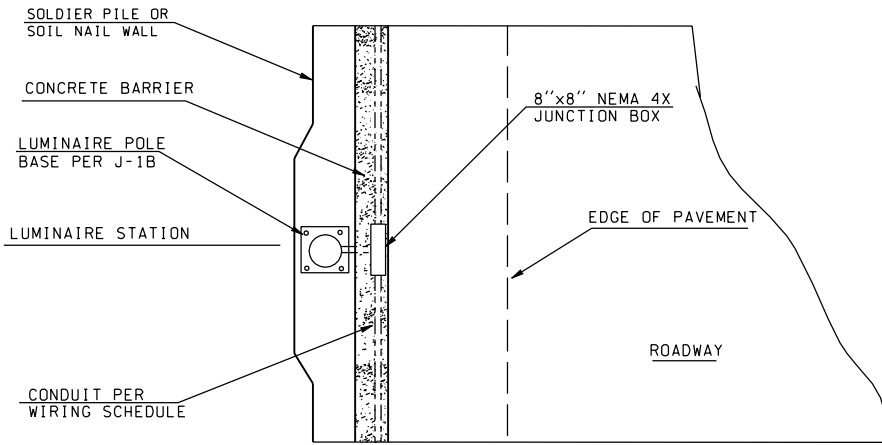
DRILLING THROUGH REINFORCING STEEL IS NOT ALLOWED. IF STEEL IS HIT WHILE DRILLING, THE LOCATION SHALL BE MOVED AND THE ABANDONED HOLE FILLED WITH GROUT CONFORMING TO SECTION 6-02.3(20). THERE SHALL BE A MINIMUM 3" EDGE DISTANCE TO THE CENTERLINE OF ANCHOR HOLES IN CONCRETE. MOUNT THE UNISTRUT TYPE SUPPORT USING AN APPROVED RESIN BONDED ANCHOR SYSTEM, INSTALLED PER MANUFACTURERS RECOMMENDATION IN DRY CONDITIONS. RESIN BONDED ANCHORS SHALL BE STAINLESS STEEL AND SHALL BE A MINIMUM OF 3/8" DIA. UNLESS THE PLANS REQUIRE LARGER ANCHORS. (EXPANSION ANCHORS ARE NOT ALLOWED.)

RIGID GALVANIZED STEEL CONDUIT		
NOMINAL TRADE SIZE IN.	CONDUIT STRAP OUTSIDE	DIAMETER INSIDE
1/2	0.840	0.632
3/4	1.050	0.836
1	1.315	1.063
1 1/4	1.660	1.394
1 1/2	1.900	1.624
2	2.375	2.083
2 1/2	2.875	2.489
3	3.500	3.090
3 1/2	4.000	3.570
4	4.500	4.050
5	5.563	5.073
6	6.625	6.093

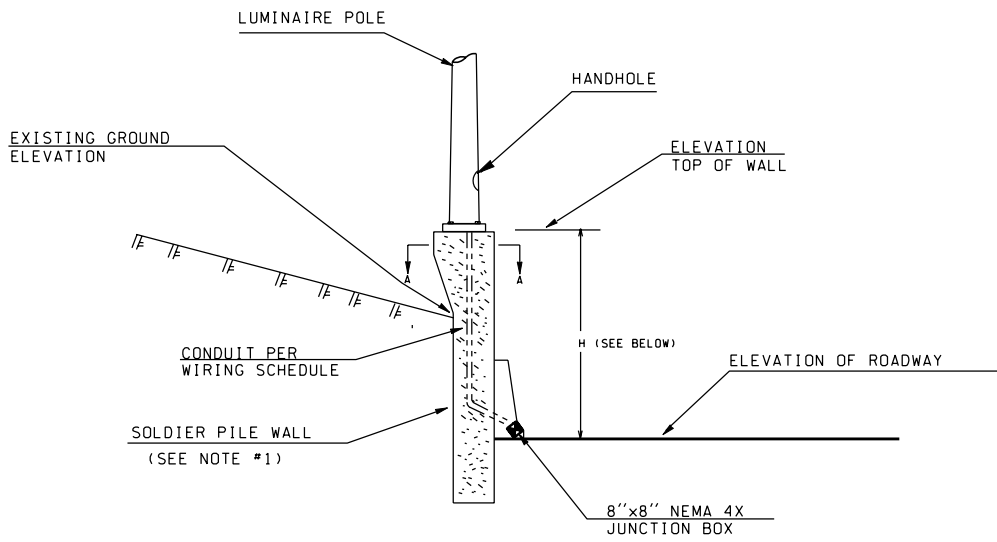
SCHEDULE 40 PVC		
NOMINAL TRADE SIZE IN.	CONDUIT STRAP OUTSIDE	DIAMETER INSIDE
1/2	0.840	0.622
3/4	1.050	0.824
1	1.315	1.049
1 1/4	1.660	1.380
1 1/2	1.900	1.610
2	2.375	2.067
2 1/2	2.875	2.469
3	3.500	3.068
3 1/2	4.000	3.548
4	4.500	4.026
5	5.563	5.047
6	6.625	6.065

SCHEDULE 80 PVC		
NOMINAL TRADE SIZE IN.	CONDUIT STRAP OUTSIDE	DIAMETER INSIDE
1/2	0.840	0.546
3/4	1.050	0.742
1	1.315	0.957
1 1/4	1.660	1.278
1 1/2	1.900	1.500
2	2.375	1.939
2 1/2	2.875	2.323
3	3.500	2.900
4	4.500	3.826
5	5.563	4.813

FILE NAME S:\414126\Electrical\MASTER_FILES\DETAILS_V8\UNISTRUT_E.dgn				REGION NO. STATE		FED.AID PROJ.NO.		DATE		P.E. STAMP BOX		DATE		Washington State Department of Transportation		ENGLISH		PLOT1	
TIME 12:40:09 PM		DATE 09/23/2004		10 WASH		5.04E													
DESIGNED BY		ATTACHMENT BOLT SPACING MIN/MAX		2-6-02 JH		JOB NUMBER		LOCATION NO.		DATE		P.E. STAMP BOX		UNISTRUT DETAILS		SHEET			
ENTERED BY		"NOTES" REVISED.		6-13-01 JH		CONTRACT NO.										OF			
CHECKED BY		ANCHOR BOLT "PENETRATION" LENGTH		6-7-01 JH		DATE		BY		DATE		P.E. STAMP BOX		UNISTRUT DETAILS		SHEETS			
PROJ. ENGR.		ADD DETAIL A		2-6-01 JH		DATE		BY		DATE		P.E. STAMP BOX		UNISTRUT DETAILS		SHEETS			
REGIONAL ADM.		ADD BOLTS AT ENDS/SPEC. SECTION CHNG.		8-21-00 JH		DATE		BY		DATE		P.E. STAMP BOX		UNISTRUT DETAILS		SHEETS			
		NEW SHT DESIGNATION AND #				DATE		BY		DATE		P.E. STAMP BOX		UNISTRUT DETAILS		SHEETS			
		REVISION				DATE		BY		DATE		P.E. STAMP BOX		UNISTRUT DETAILS		SHEETS			



SECTION A-A




DETAIL "D"

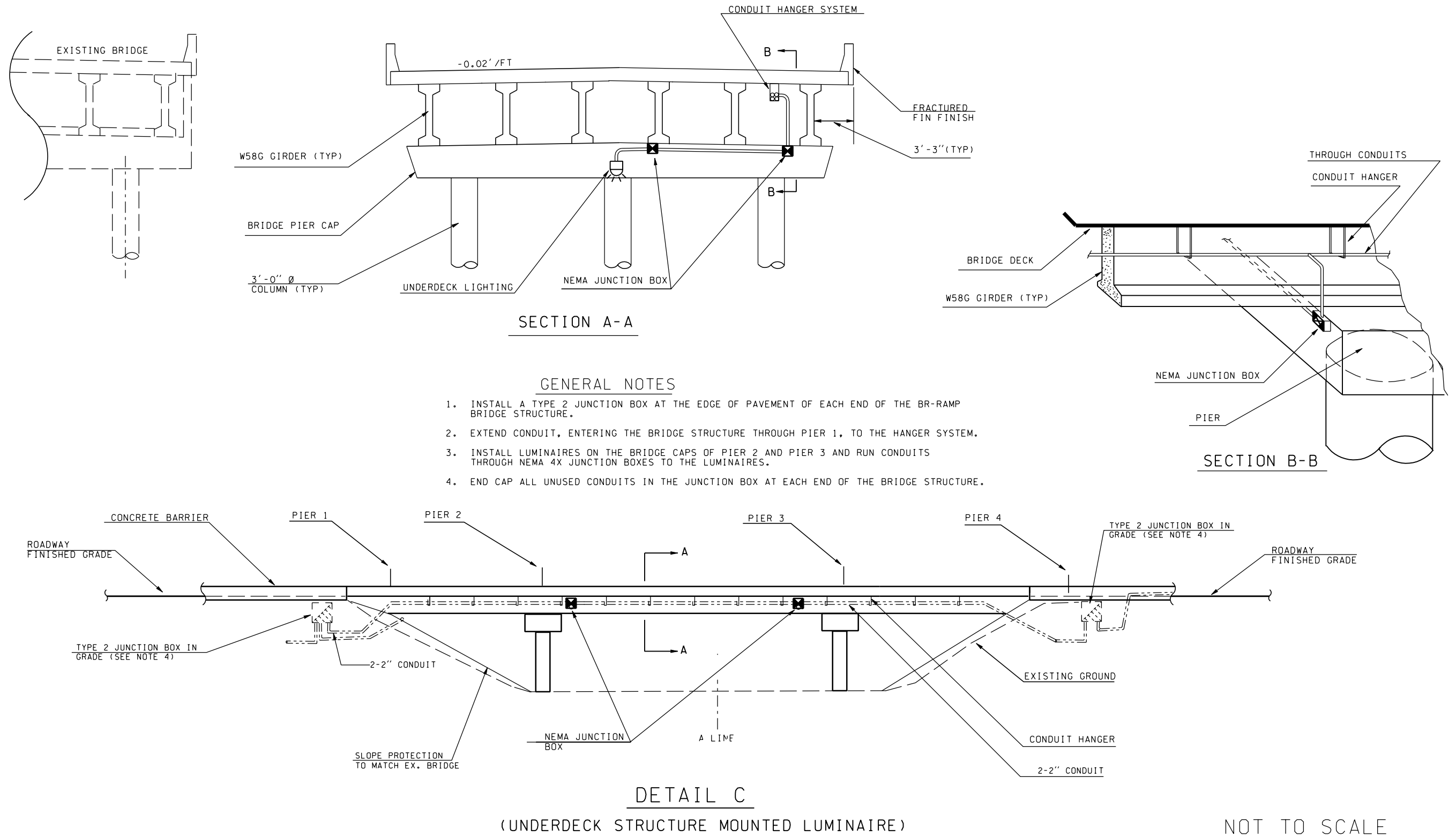
LUMINAIRES-MOUNTED ON SOLDIER PILE WALL (SPW


- NOTES:

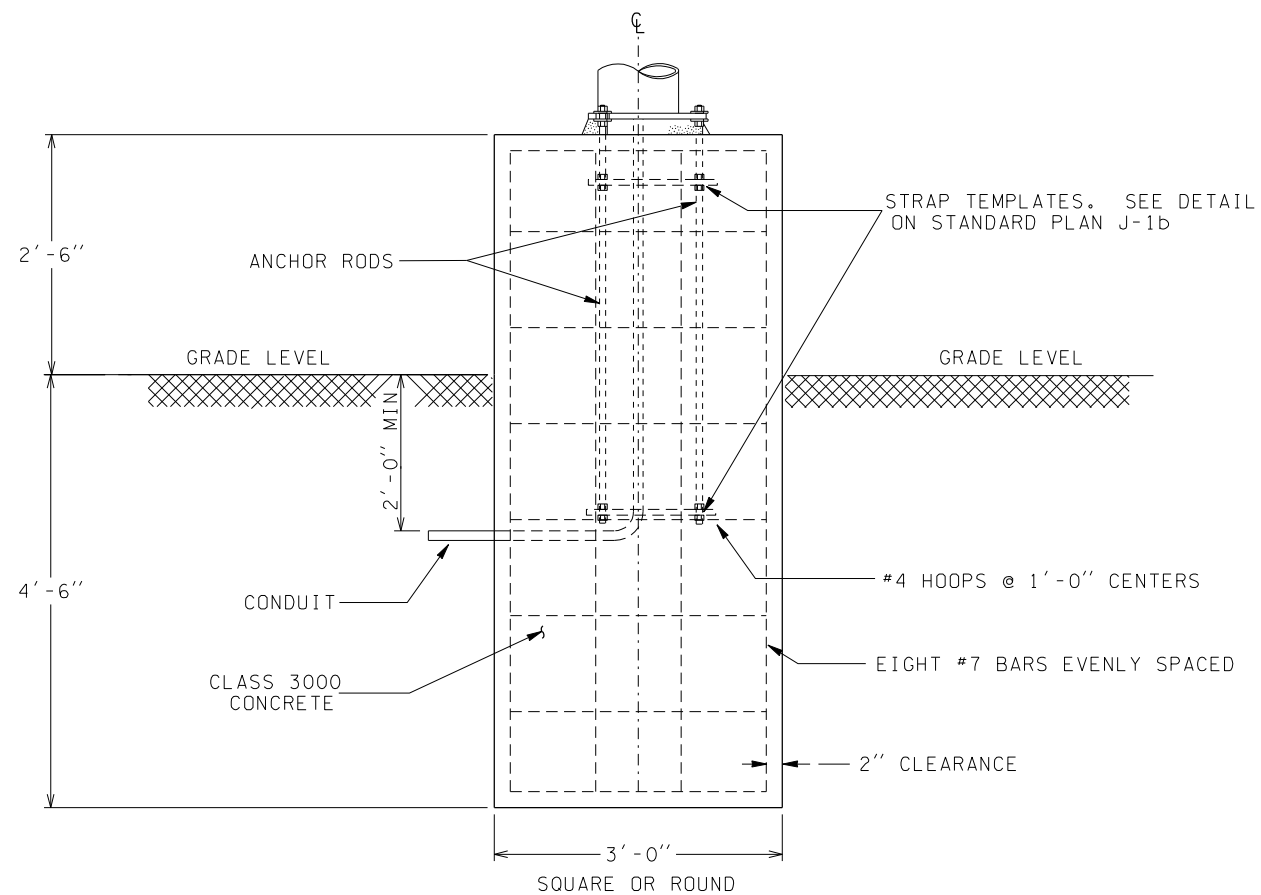
1. SEE BRIDGE PLANS FOR WALL CONSTRUCTION AND POLE BASE ATTACHMENT DETAILS.
2. FOR BRACKET ANCHORAGE DETAILS SEE SHEET ED9B.
3. JUNCTION BOXES SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE FACE OF THE TRAFFIC BARRIER.

NOT TO SCALE


					REGION NO.	STATE	FED.AID PROJ.NO.	ENVIRONMENTAL AND ENGINEERING SERVICE CENTER	 Washington State Department of Transportation	ENGLISH	5.05E
DESIGNED BY					10	WASH					
ENTERED BY					JOB NUMBER					OF	
CHECKED BY					CONTRACT NO.					SHEETS	
PROJ. ENGR.					JH						
REGIONAL ADM.		2/2/99	FIXED TEXT	JH						ILLUMINATION DETAILS	
	DATE	DATE	REVISION	BY							

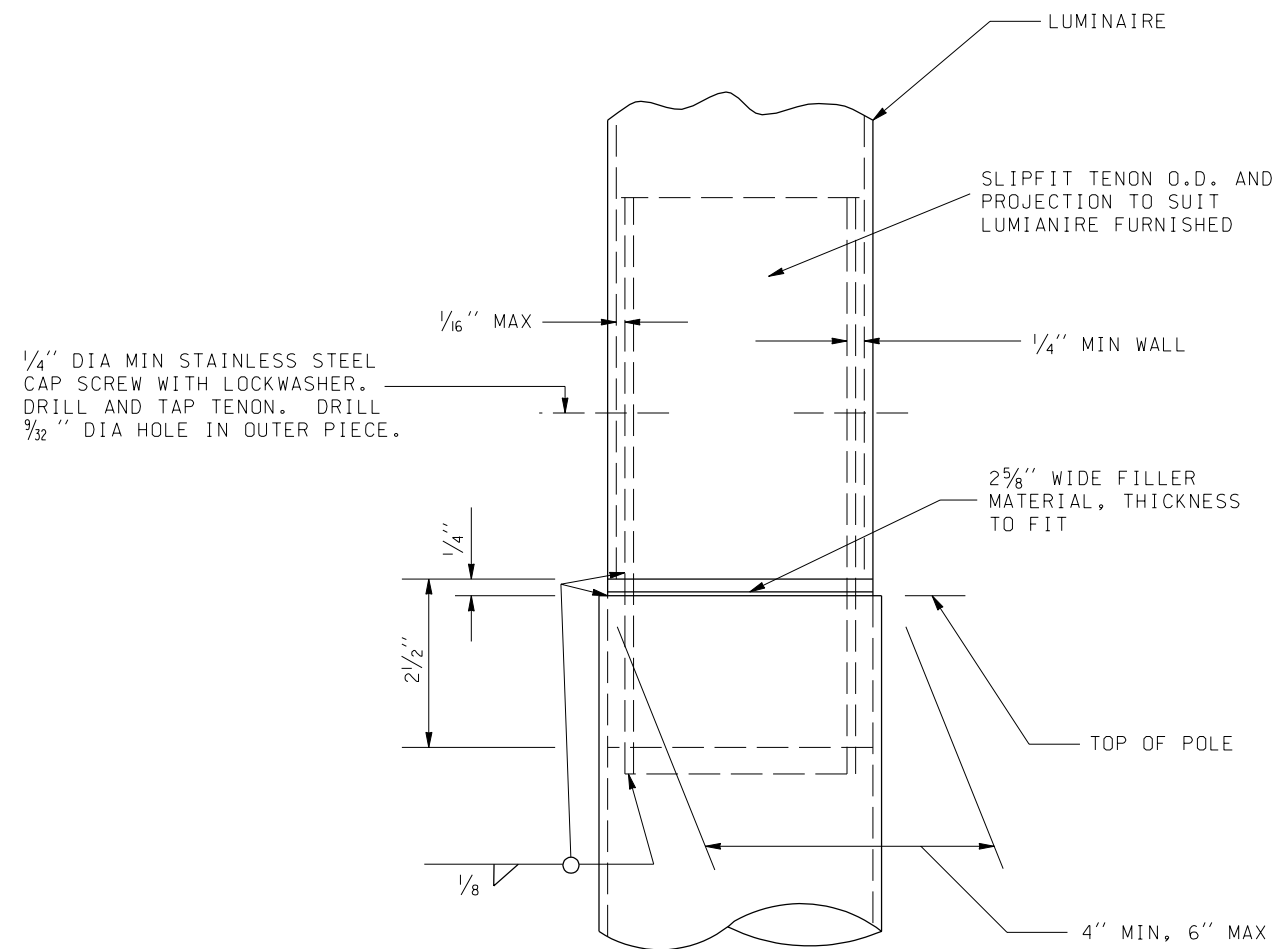


					REGION NO.	STATE	FED.AID PROJ.NO.	ENVIRONMENTAL AND ENGINEERING SERVICE CENTER	 Washington State Department of Transportation	ENGLISH	5.06E
DESIGNED BY					10	WASH					
ENTERED BY										OF	
CHECKED BY					JOB NUMBER					SHEETS	
PROJ. ENGR.					CONTRACT NO.						
REGIONAL ADM.		5/28/99	DELETED TEXT (SEE SHEET..)	JH						ILLUMINATION DETAILS	
	DATE	DATE	REVISION	BY							



MODIFIED STEEL LIGHT STANDARD WITH FIXED BASE
SEE STD PLAN J-1b FOR OTHER DETAILS

FILE NAME S:\414126\Electrical\MASTER_FILES\DETAILS V8\Ltbase.dgn														 Washington State Department of Transportation		MODIFIED STEEL LIGHT STANDARD FOUNDATION FOR USE IN PARKING LOTS		PLOT1	
TIME 12:49:41 PM						REGION NO. STATE		FED.AID PROJ.NO.										5.20E	
DATE 01/05/2005						10 WASH													
						JOB NUMBER													
DESIGNED BY																			
ENTERED BY								CONTRACT NO.		LOCATION NO.						SHEET			
CHECKED BY		MODIFIED STEEL LIGHT STD FOUNDATION		12-11-03		KN										OF			
PROJ. ENGR.		NEW SHEET PLACEMENT		4-16-03		JH										SHEETS			
REGIONAL ADM.		REVISION		DATE		BY													




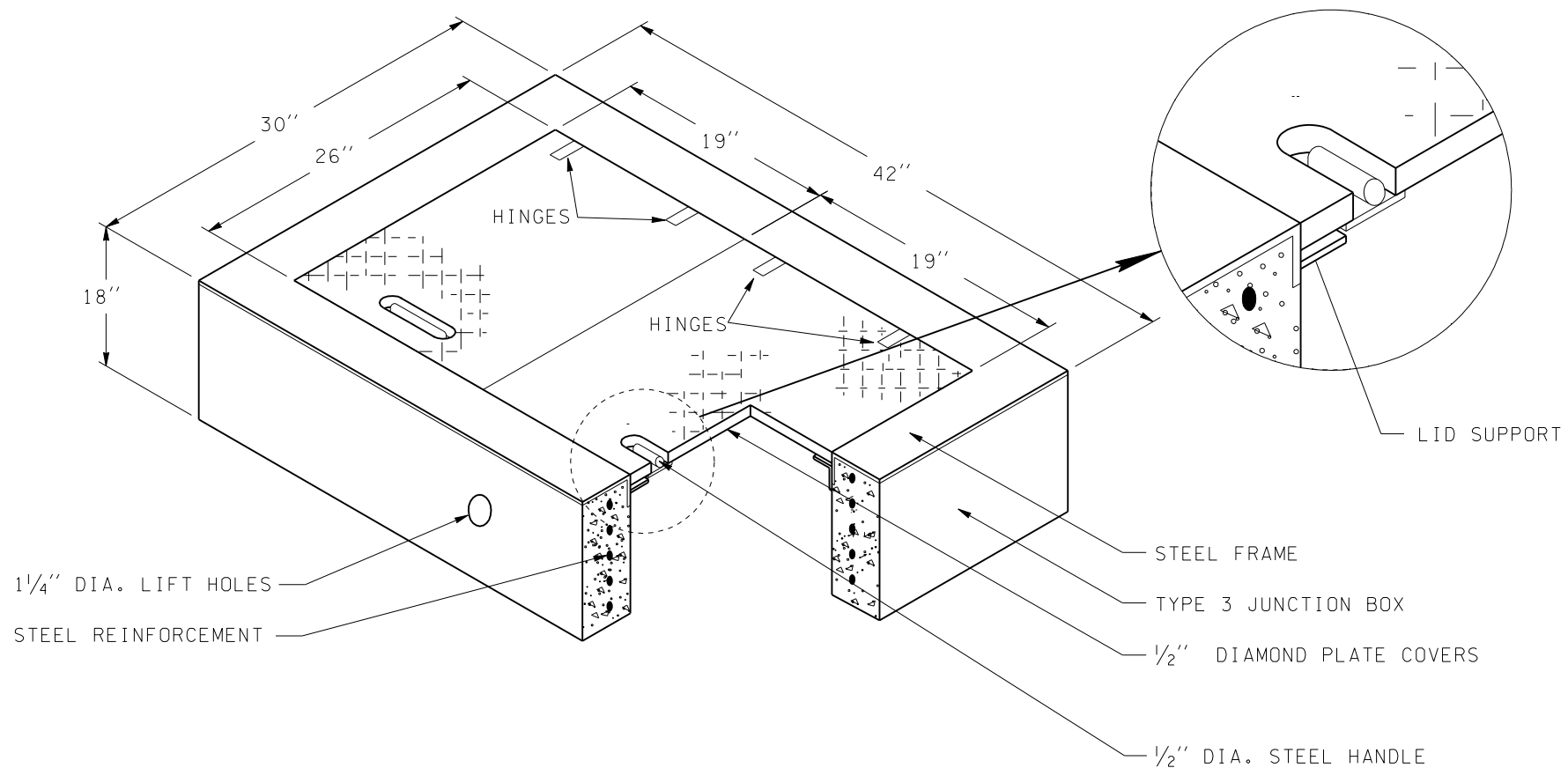
LIGHT STANDARD DETAIL-NO MAST ARM

FILE NAME	S:\414126\Electrical\MASTER_FILES\DETAILS V8\Ltstandard.e.dgn			REGION NO.	STATE	FED.AID PROJ.NO.				WSDOT	ENGLISH	PLOT1
TIME	02:13:23 PM			10	WASH							5.30E
DATE	02/04/2004			JOB NUMBER								SHEET
DESIGNED BY	WSDOT			CONTRACT NO.		LOCATION NO.						OF
ENTERED BY	K. NGUYEN											SHEETS
CHECKED BY												
PROJ. ENGR.												
REGIONAL ADM.		REVISION	DATE	BY							LIGHT STANDARD DETAIL	




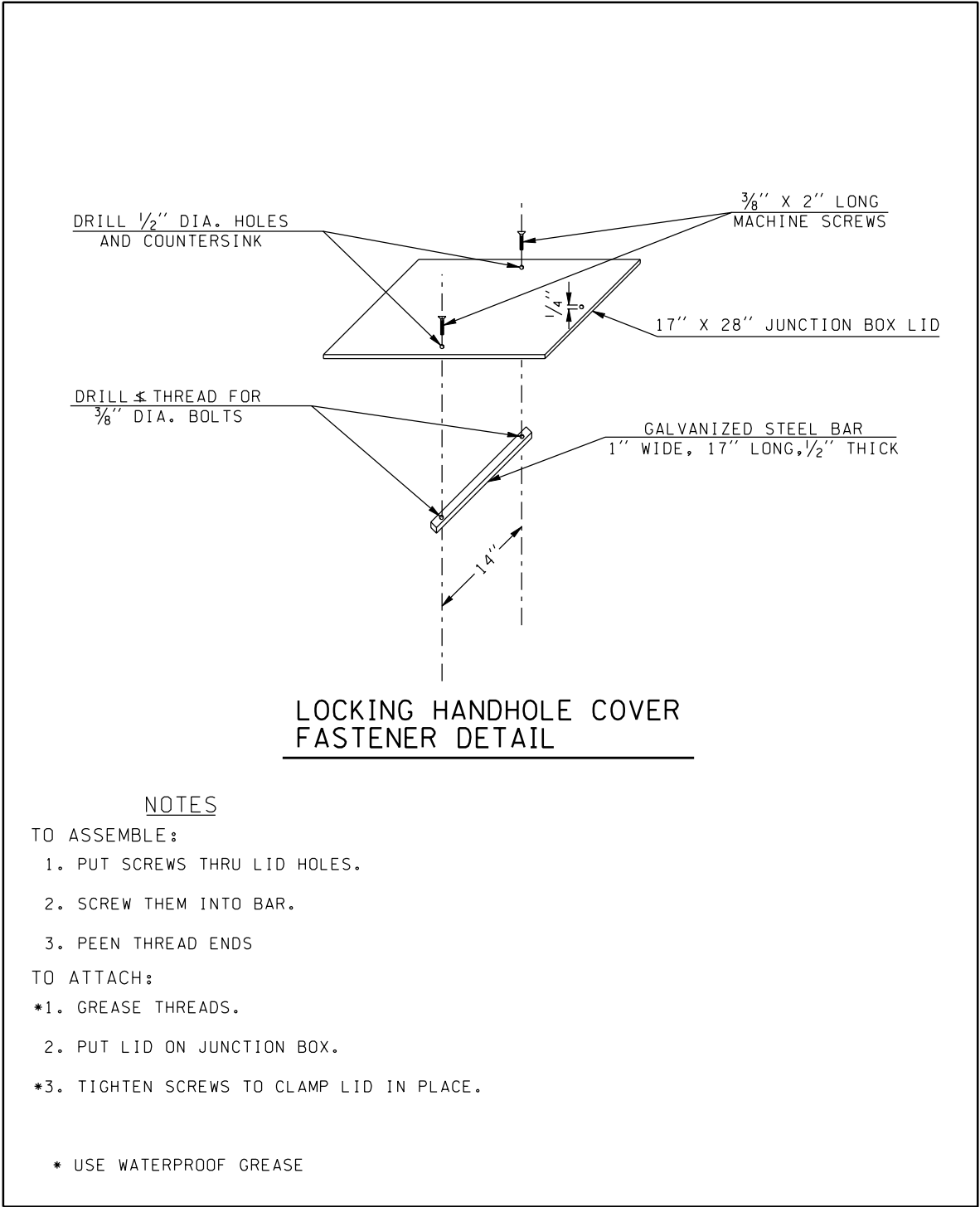
TYPE 3 JUNCTION BOXES SHALL MEET ALL SPECIFICATIONS ON STANDARD PLAN J-11a WITH THE EXCEPTION OF THE BOX DEPTH AND LID WHICH SHALL BE AS SHOWN ON THIS DETAIL. THE HINGES SHALL ALLOW THE LID TO OPEN 180°. WHEN CLOSED, NO PARTS SHALL PROJECE ABOVE THE LID OR STEEL COVER.

		2-26-97	DELETE WORD "MODIFIED"	BK	REGION NO.	STATE	FED.AID PROJ.NO.	ENVIRONMENTAL AND ENGINEERING SERVICE CENTER	 Washington State Department of Transportation	(ENGLISH) WITH LOCKING BOLT		6.01E
		3-25-97	LOCKING BOLT DETAIL	BK	10	WASH	SHEET					
DESIGNED BY WSDOT		4-29-97	TEXT	BK			JOB NUMBER					OF
ENTERED BY WSDOT		3-12-98	TEXT	BK								
CHECKED BY WSDOT		5-12-98	TEXT	JH								
PROJ. ENGR.					CONTRACT NO.					SHEETS		
REGIONAL ADM.												
	DATE	DATE	REVISION	BY					TYPE 3 J BOX (DUAL LID)			




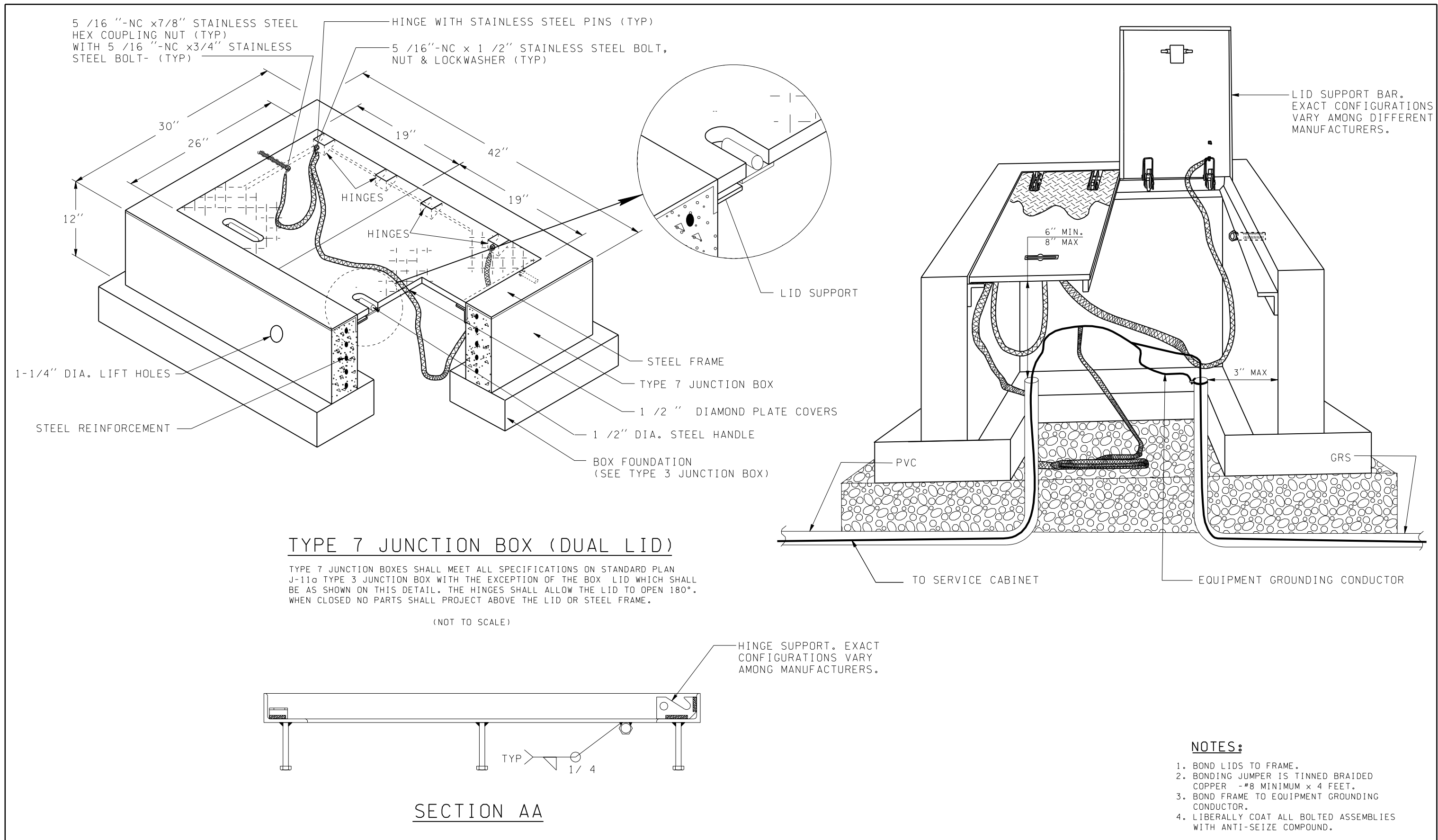
HISTORICAL DOCUMENT
FOR VIEWING PLEASURE ONLY!
USE TYPE 6 INSTEAD

	6-30-98		WITHOUT LOCKING BOLT	JH	REGION NO.	STATE	FED.AID PROJ.NO.	ENVIRONMENTAL AND ENGINEERING SERVICE CENTER	 Washington State Department of Transportation	ENGLISH	6.02E
DESIGNED BY	WSDOT				10	WASH				WITHOUT LOCKING BOLT	SHEET
ENTERED BY	WSDOT										OF
CHECKED BY	WSDOT										SHEETS
PROJ. ENGR.											
REGIONAL ADM.											
	DATE	DATE	REVISION	BY						TYPE 3 J BOX (DUAL LID)	

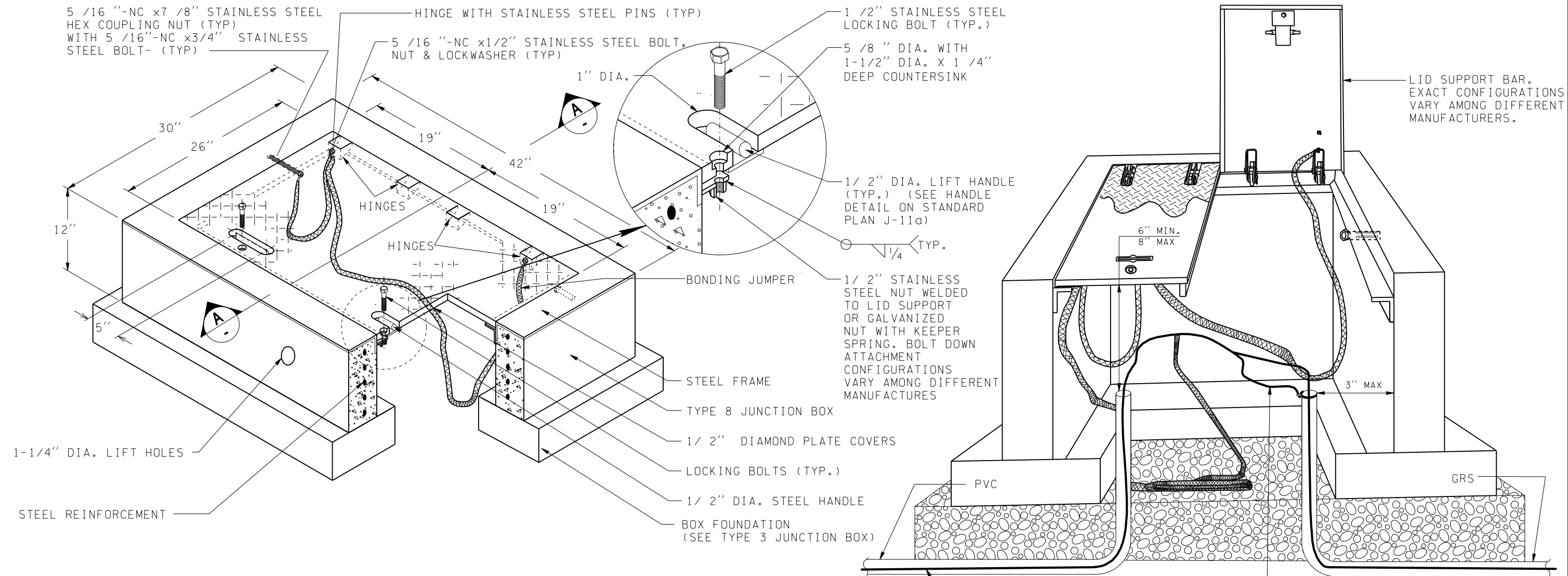


NOTE TO DESIGNER:
DIMENSIONS NEED TO BE VERIFIED
FOR TYPE OF BOX - TYPE I, II OR III
AND DRAWING MODIFIED.

					REGION NO.	STATE	FED.AID PROJ.NO.	ENVIRONMENTAL AND ENGINEERING SERVICE CENTER	 Washington State Department of Transportation	ENGLISH	6.03E
DESIGNED BY	WSDOT				10	WASH					
ENTERED BY	WSDOT									JOB NUMBER	
CHECKED BY	WSDOT										CONTRACT NO.
PROJ. ENGR.											
REGIONAL ADM.										OF	SHEETS
	DATE	DATE	REVISION	BY						JUNCTION BOX DETAILS	



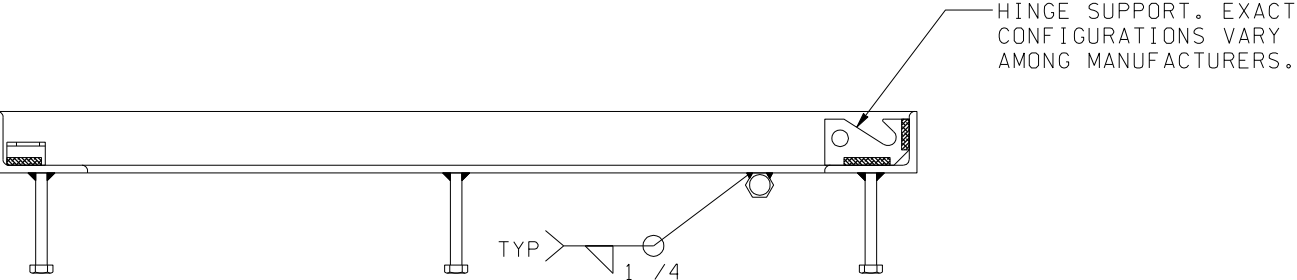
FILE NAME S:\414126\Electrical\MASTER_FILES\DETAILS V8\jbtype7&8 8-31-04.dgn																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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TYPE 8 JUNCTION BOX (DUAL LID)

TYPE 8 JUNCTION BOXES SHALL MEET ALL SPECIFICATIONS ON STANDARD PLAN J-11a TYPE 3 JUNCTION BOX WITH THE EXCEPTION OF THE BOX LID WHICH SHALL BE AS SHOWN ON THIS DETAIL. THE HINGES SHALL ALLOW THE LID TO OPEN 180°. WHEN CLOSED NO PARTS SHALL PROJECT ABOVE THE LID OR STEEL FRAME.


(NOT TO SCALE)

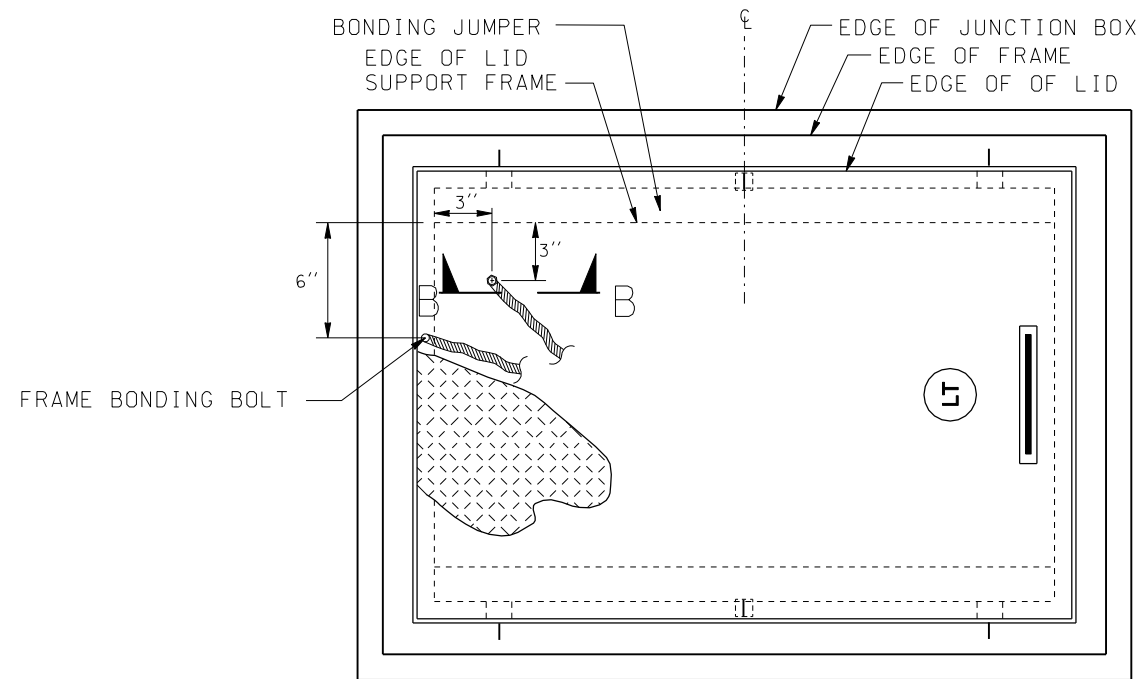


SECTION AA

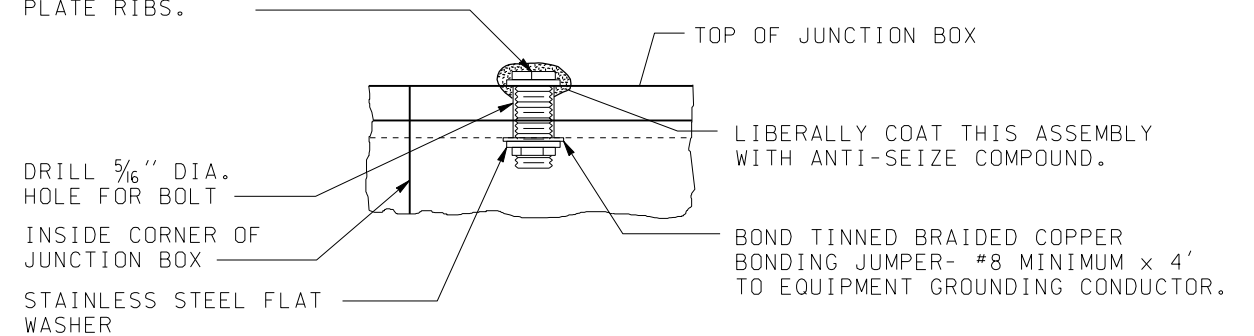
NOTES:

1. BOND LIDS TO FRAME.
2. BONDING JUMPER IS TINNED BRAIDED COPPER -#8 MINIMUM x 4 FEET.
3. BOND FRAME TO EQUIPMENT GROUNDING CONDUCTOR.
4. LIBERALLY COAT ALL BOLTED ASSEMBLIES WITH ANTI-SEIZE COMPOUND.

FILE NAME S:\414126\Electrical\MASTER_FILES\DETAILS V8\jbtype7&8 8-31-04.dgn														 Washington State Department of Transportation		ENGLISH WITH LOCKING BOLT		PLOT1	
TIME 06:42:00 AM	ADD BOND JUMP, & DETAILS	7-13-04	JH	REGION NO. 10	STATE WASH	FED.AID PROJ.NO.					6.11E								
DATE 09/01/2004	ADD BOX FOUNDATION	4-15-04	KN																
	TEXT	5-12-98	JH	JOB NUMBER					SHEET										
DESIGNED BY WSDOT	TEXT	3-12-98	BK		CONTRACT NO.					OF									
ENTERED BY WSDOT	TEXT	4-29-97	BK					SHEETS											
CHECKED BY WSDOT	LOCKING BOLT DETAIL	3-25-97	BK	LOCATION NO.															
PROJ. ENGR.	DELETE WORD "MODIFIED"	2-26-97	BK																
REGIONAL ADM.	REVISION	DATE	BY																
										DATE		DATE							
										P.E. STAMP BOX		P.E. STAMP BOX							



1/4" NC x 1" STAINLESS OVAL HEAD MACHINE SCREW-PHILLIPS WITH STAINLESS STEEL NUT. DRILL AND CHAMFER LID. CENTER HOLE BETWEEN DIAMOND PLATE RIBS.

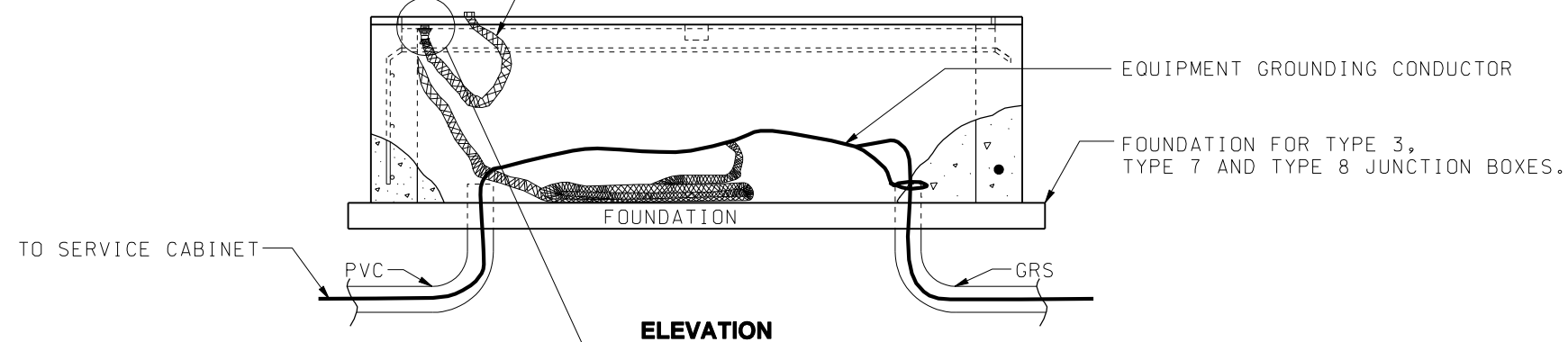


SECTION BB

LID TO FRAME
BONDING JUMPER

PLAN

FRAME TO EQUIPMENT
BONDING CONDUCTOR
BONDING JUMPER

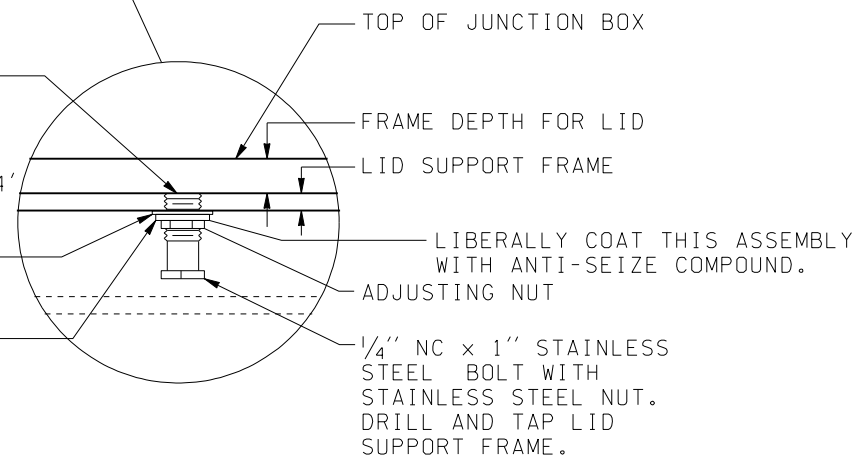


ELEVATION

ADJUST BOLT FLUSH WITH TOP OF
LID SUPPORT FRAME

BONDING JUMPER- #8 MINIMUM x 4'
TINNED BRAIDED COPPER. BOND
JUMPER TO EQUIPMENT GROUNDING
CONDUCTOR

STAINLESS STEEL FLAT WASHER



TYPE 1,2,3,7 &8 JUNCTION BOX EXISTING FRAME & LID BONDING DETAIL

NOTES:

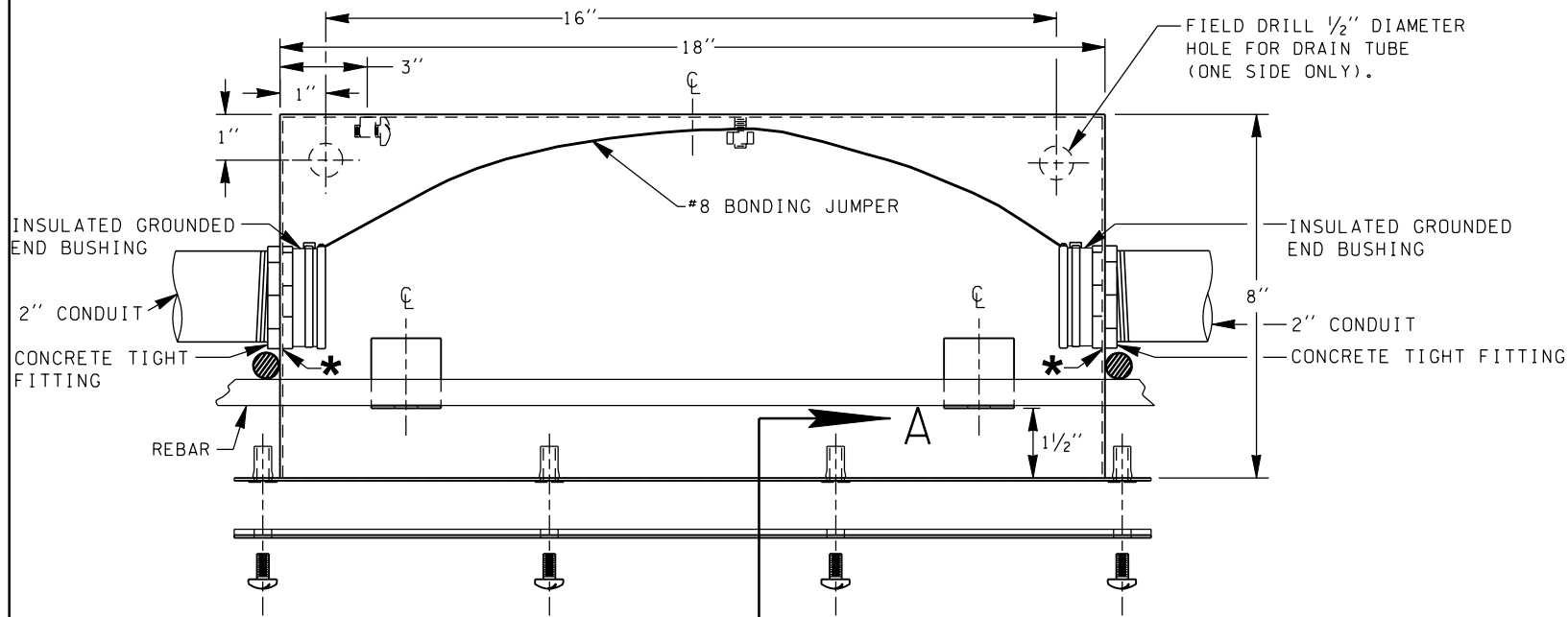
1. BOND LIDS TO FRAME.
2. BONDING JUMPER IS TINNED BRAIDED COPPER -#8 MINIMUM x 4 FEET.
3. BOND FRAME TO EQUIPMENT GROUNDING CONDUCTOR.

FILE NAME	S:\414126\Electrical\MASTER FILES\DETAILS V8\jbtype7&8 8-17-04.dgn	REGION NO.	STATE	FED.AID PROJ.NO.					PLOT11
TIME	01:42:00 PM	10	WASH						6.12E
DATE	08/18/2004	JOB NUMBER							
DESIGNED BY	WSDOT	CONTRACT NO.		LOCATION NO.					
ENTERED BY	WSDOT								
CHECKED BY	WSDOT								
PROJ. ENGR.									
REGIONAL ADM.	REVISION	DATE	BY						



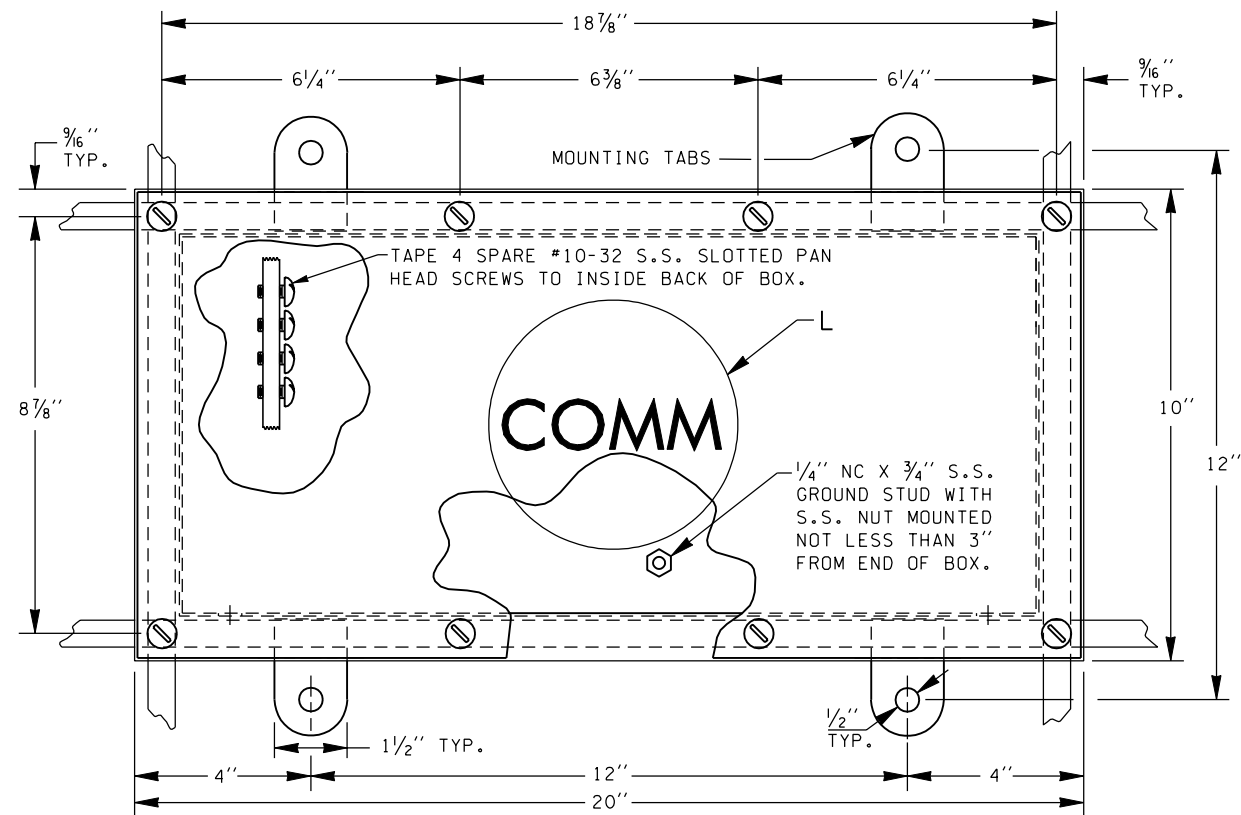
EXISTING FRAME AND LID BONDING DETAIL

SHEET
OF
SHEETS



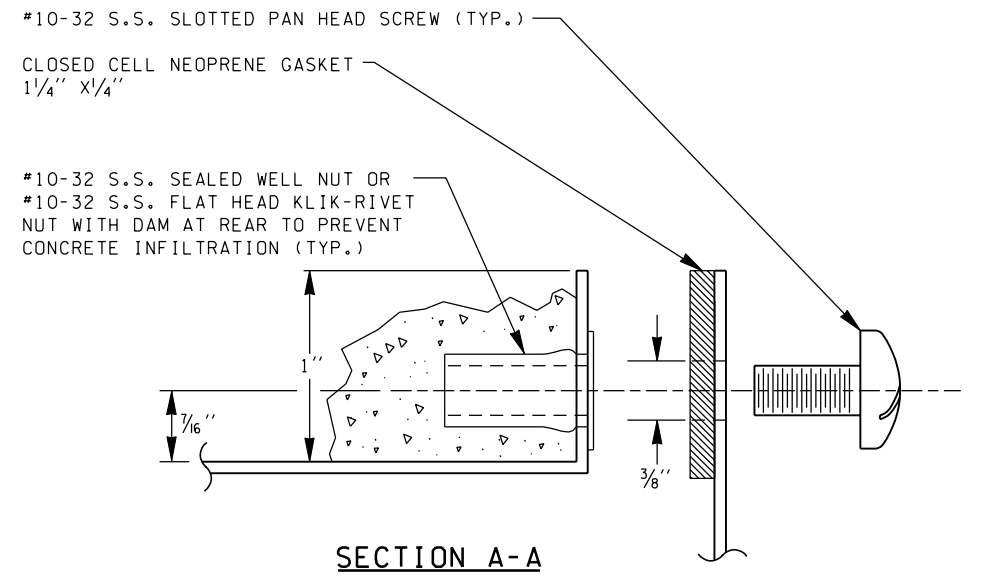
* USE THIS SAME METHOD FOR EVERY CONDUIT THAT ENTERS THE JUNCTION BOX. FIELD DRILL OR PUNCH HOLES FOR CONDUIT ENTRY WHILE MAINTAINING CONCRETE TIGHT ENTRANCE.

PLAN VIEW



PROFILE VIEW

GENERAL NOTE: JUNCTION BOX LABELING SHOWN FOR STRUCTURES ONLY. LABEL ALL OTHER JUNCTION BOXES PER STANDARD PLAN J-11a AND SPECIAL PROVISIONS.

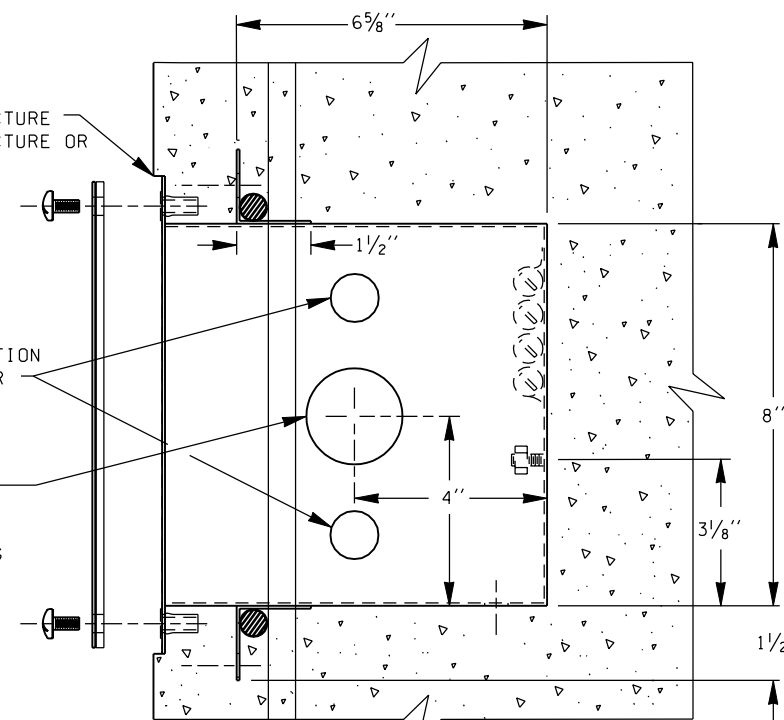


SECTION A-A

FLUSH MOUNTED IN STRUCTURE OR BARRIER. SEE STRUCTURE OR BARRIER DETAIL.

POSSIBLE CONDUIT LOCATION FOR LUMINAIRE OR OTHER ELECTRICAL SYSTEMS.

2" CONDUIT. CENTER IN JUNCTION BOX UNLESS ADDING ADDITIONAL CONDUIT



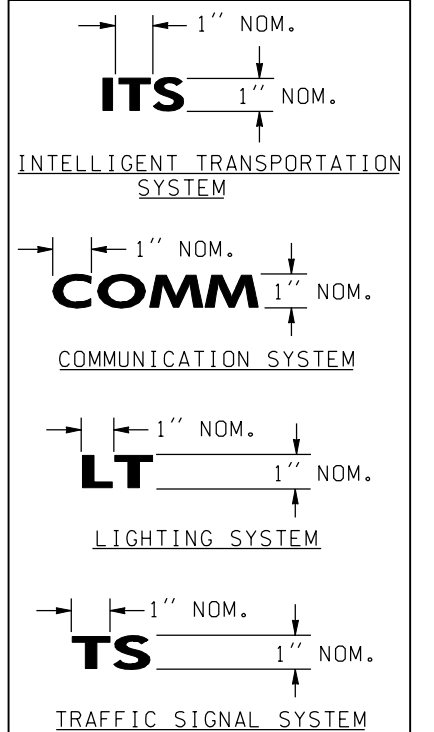
SIDE VIEW

NEMA 4X FLUSH MOUNT J-BOX

TYPE 304 STAINLESS STEEL, WELDED SEAM CONSTRUCTION
#12 GA BACKBOX W / #2B FINISH
#12 GA COVER W / #4 FINISH
#12 GA MOUNTING TABS
NOT TO SCALE

LEGEND DETAIL

MARK L



FORM LETTERS WITH 1/16" S.S. WELDED OR ENGRAVED LINE THICKNESS OR STAMP

	4/4/00		Dimensioning, added conduit, labeled views, legend ITS	TB	REGION NO.	STATE	FED.AID PROJ.NO.
DESIGNED BY	1/20/00		MISSPELLED SURVEILLANCE (LEGEND)	JH	10	WASH	
ENTERED BY J. HARVEY	5/28/99		TYPE 316 TO TYPE 304	JH			
CHECKED BY	1/28/99		removed bus bar	JH	JOB NUMBER		
PROJ. ENGR.	6/22/98		size & location				
REGIONAL ADM.			of mounting tabs	JH	CONTRACT NO.		
	DATE	DATE	REVISION	BY			

FIELD OPERATIONS SERVICE
SUPPORT CENTER



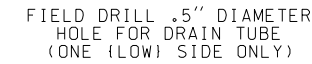
Washington State
Department of Transportation

ENGLISH

FLUSH MOUNT SS J-BOX

6.20E

SHEET
OF
SHEETS



* USE THIS METHOD FOR EVERY CONDUIT ENTERING JUNCTION BOX.
FIELD DRILL OR PUNCH HOLES FOR CONDUIT WHILE MAINTAINING
CONCRETE TIGHT ENTRANCE.




Technical drawing of a junction box showing dimensions and component locations. The drawing includes the following labels and dimensions:

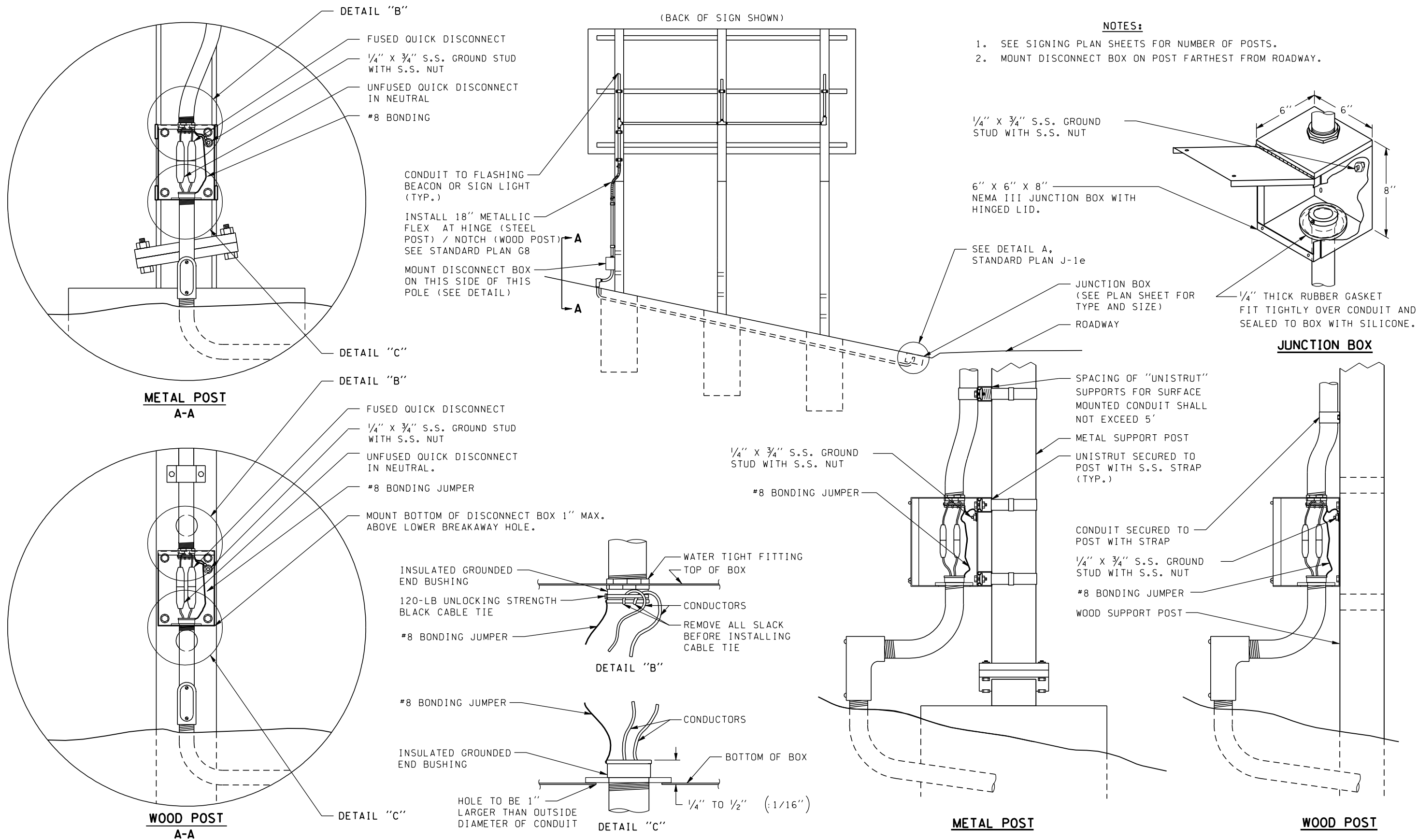
- .5" DIAMETER HOLE (TYP)**: Points to a hole in the top mounting tab.
- .5"**: Dimension for the width of the top mounting tab.
- MOUNTING TAB (4 TOTAL)**: Points to the top mounting tab.
- POSSIBLE CONDUIT LOCATION FOR LUMINAIRE OR OTHER ELECTRICAL SYSTEM**: Points to the top and bottom conduit entry points.
- VERTICALLY CENTER CONDUIT IN JUNCTION BOX UNLESS INSTALLING ADDITIONAL CONDUIT**: Points to the central conduit entry point.
- POSSIBLE CONDUIT LOCATION FOR LUMINAIRE OR OTHER ELECTRICAL SYSTEM**: Points to the bottom conduit entry point.
- .3346"**: Dimension for the offset of the bottom mounting tab.
- 1"**: Dimension for the offset of the bottom mounting tab.
- 2.875"**: Dimension for the width of the bottom mounting tab.
- 3.5"**: Dimension for the width of the junction box.
- 4.25"**: Dimension for the width of the junction box.
- 8"**: Dimension for the height of the junction box.
- 3.125"**: Dimension for the height of the junction box.
- TACK**: Label for the bottom mounting tab.
- " NC X 3/4" S.S. STUD WITH NUT AND TWO S.S. WASHERS (4 TOTAL)**: Points to the bottom mounting tab.

CONDUITS SHALL BE VERTICALLY ALIGNED. CONDUITS SHALL BE PLACED WITH EQUIDISTANCE FROM ADJACENT CONDUITS TO JUNCTION BOX WALLS




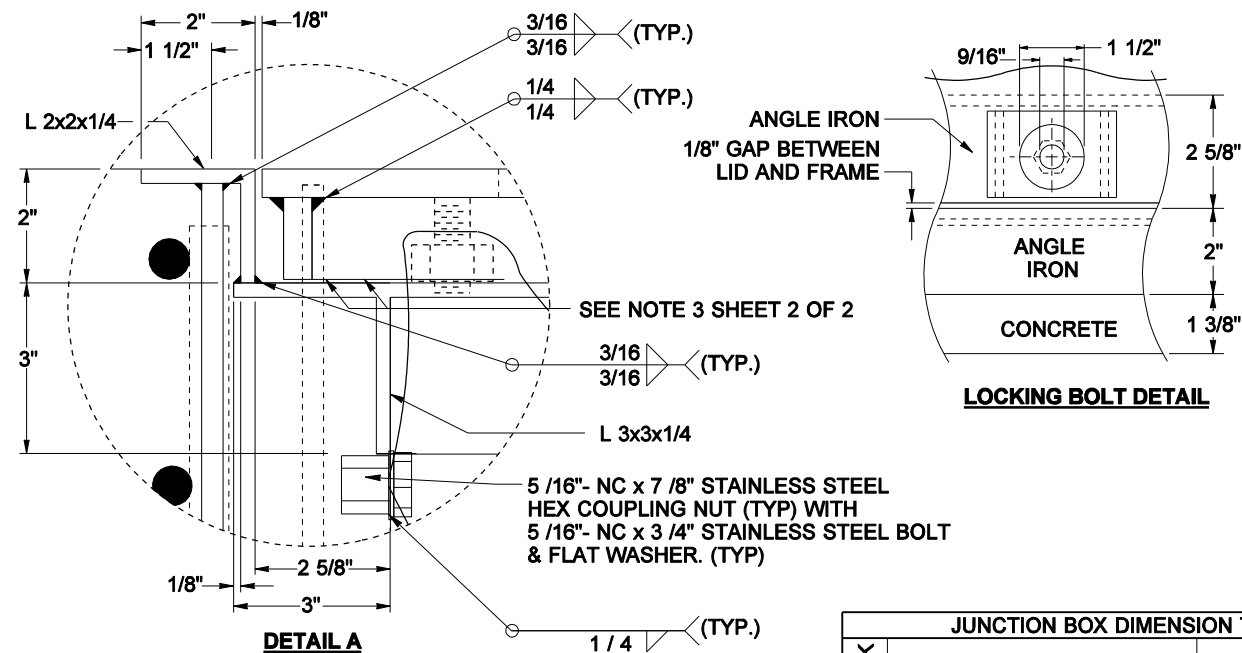
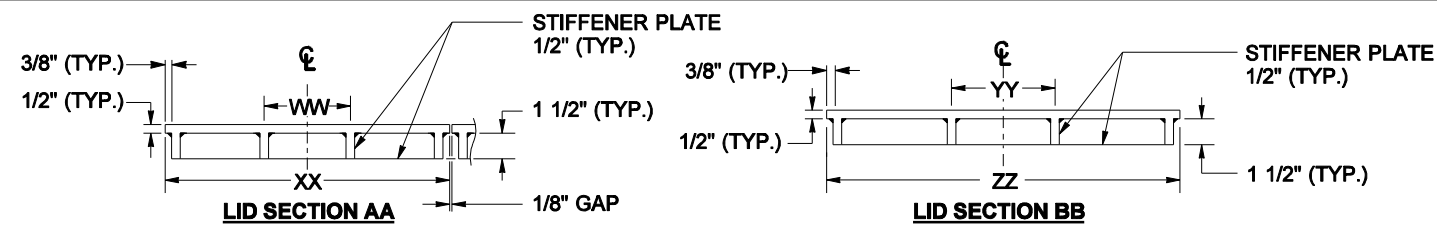
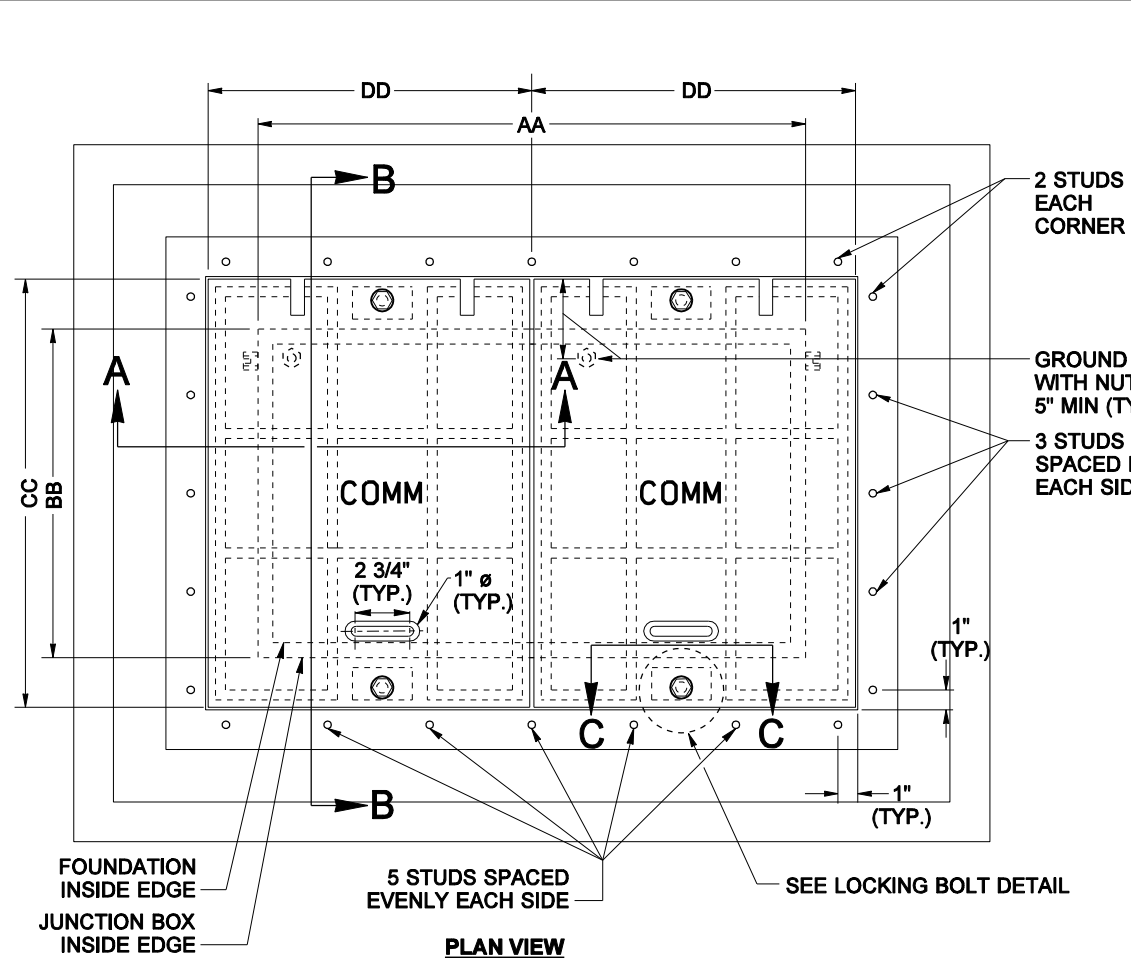
NEMA 3R ADJUSTABLE FLUSH MOUNT JUNCTION BOX

FILE NAME S:\4126\Electrical\MASTER_FILES\DETAILS V8\Adjflsjb.dgn										 <p>Washington State Department of Transportation</p>										<p>ENGLISH</p> <p>NEMA 3R ADJUSTABLE JUNCTION BOX</p>										PLOT 1																			
TIME 08:03:36 AM																														REGION NO.					STATE					FED.AID PROJ.NO.									
DATE 12/21/2004																														10					WASH														
PLOTTED BY trinhha																														JOB NUMBER																			
DESIGNED BY																														CONTRACT NO.					LOCATION NO.														
ENTERED BY																				<div style="display: flex; justify-content: space-around;"> <div> DATE _____ P.E. STAMP BOX _____ </div> <div> DATE _____ P.E. STAMP BOX _____ </div> </div>																													
CHECKED BY																																																	
PROJ. ENGR.																																																	
REGIONAL ADM.					REVISION					DATE					BY					SHEETS																													

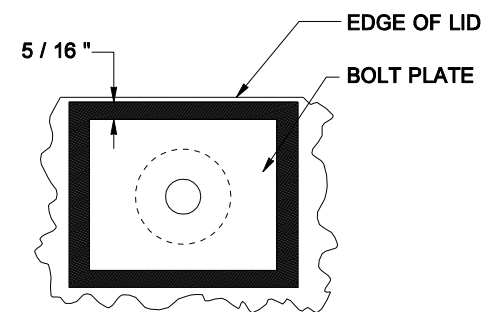
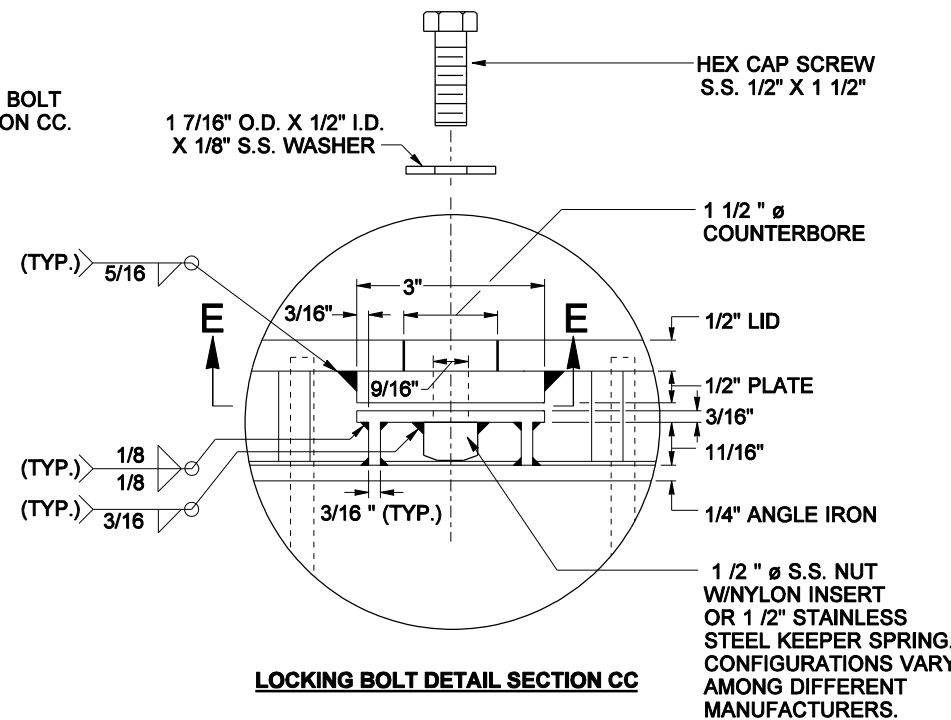
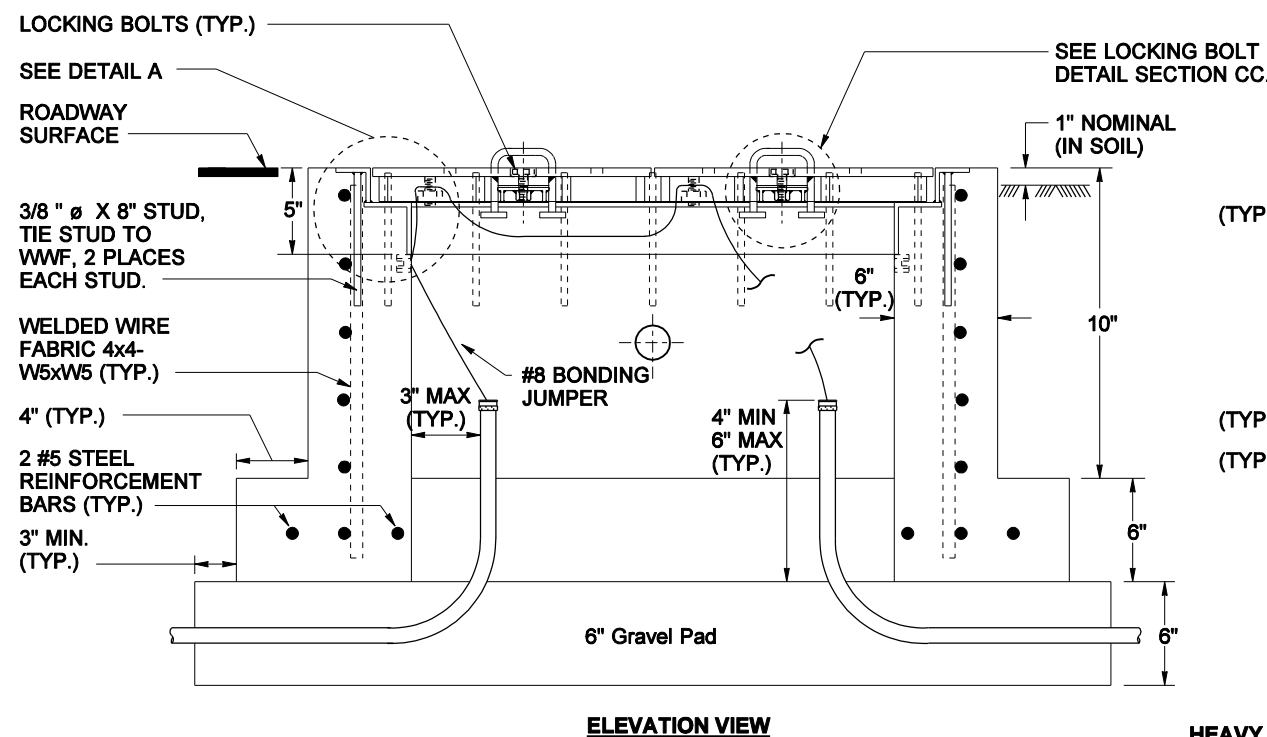


SIGN POST MOUNTED JUNCTION BOX DETAILS

					REGION NO.	STATE	FED.AID PROJ.NO.	ENVIRONMENTAL AND ENGINEERING SERVICE CENTER	 Washington State Department of Transportation	ENGLISH	6.30E
DESIGNED BY	WSDOT				10	WASH					
ENTERED BY	WSDOT		11-15-00	CONDULET TO 18" METALLIC FLEX	JH						
CHECKED BY	WSDOT		7-9-99	QUICK FUSE/ BOND JUMPER/WTIGHT FIT	JH						
PROJ. ENGR.			7-7-97	ADDED GASKET	BK	JOB NUMBER					
REGIONAL ADM.	4-12-95		3-6-97	UPDATED JUNCTION BOX	BK	CONTRACT NO.					
	DATE		DATE	REVISION	BY					SIGN POST MOUNTED JUNCTION BOX	SHEET OF SHEETS



JUNCTION BOX DIMENSION TABLE				
MARK	ITEM	BOX TYPE		
		4	5	6
AA	J. BOX INSIDE LENGTH	19"	28"	36"
BB	J. BOX INSIDE WIDTH	14"	17"	24"
CC	LID LENGTH (EACH SIDE)	19"	22"	29"
DD	LID WIDTH (EACH SIDE)	11 15/16"	16 7/16"	20 7/16"
WW	STIFFENER SPACING	4"	5 1/2"	6 3/4"
XX	STIFFENER LENGTH	11 15/16"	16 7/16"	20 7/16"
YY	STIFFENER SPACING	6"	7"	9 1/2"
ZZ	STIFFENER LENGTH	19"	22"	29"
CAPACITY - CONDUIT DIAMETER		6"	12"	24"



HEAVY DUTY TYPE 4, 5 AND 6 JUNCTION BOX (DUAL LID)
NOT TO SCALE

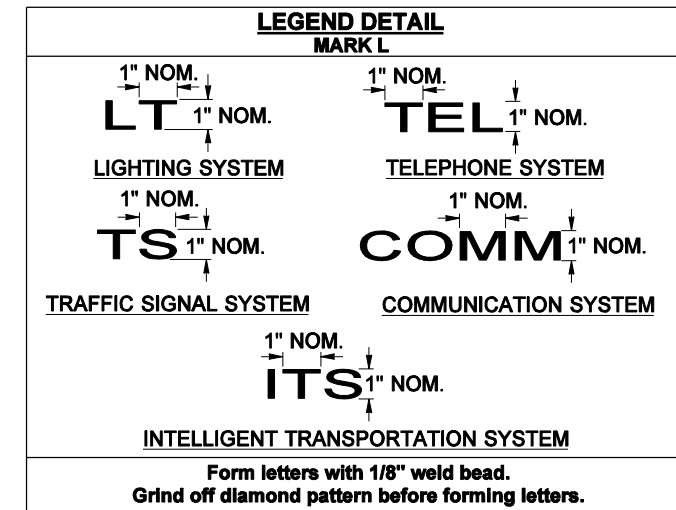
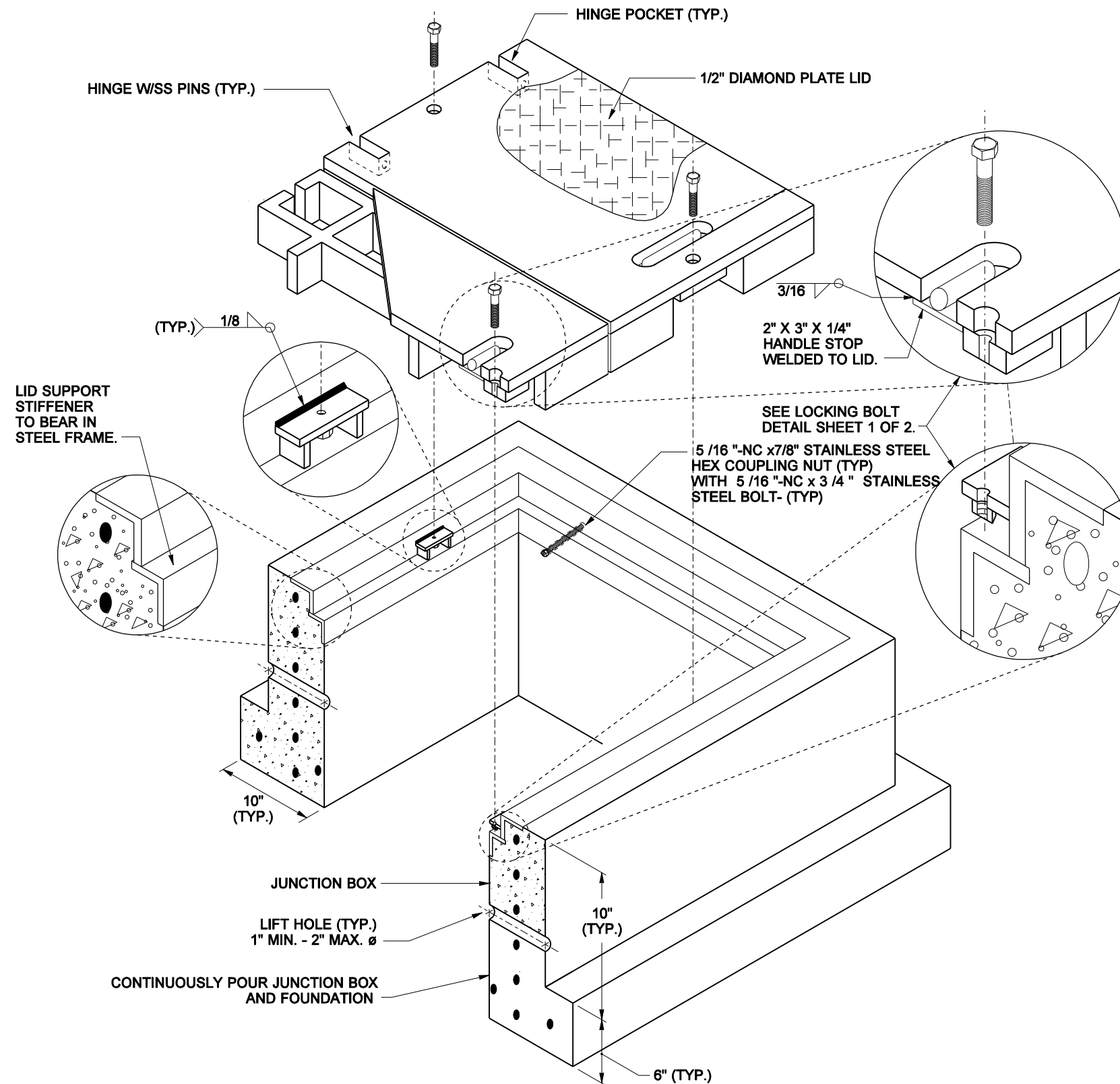
FILE NAME	S:\414126\Electrical\MASTER_FILES\DETAILS V8\Heavydutyjb.e.dgn	REGION NO.	STATE	FED.AID PROJ.NO.					PLOT11
TIME	09:23:14 AM	10	WASH						6.40E
DATE	01/12/2005								
DESIGNED BY	RENAME JUNCTION BOX	1-11-2005	KN	JOB NUMBER					
ENTERED BY	HEX COUPLING NUT, BASE CHANGE 1"	7-9-2004	JH	CONTRACT NO.					
CHECKED BY	REVISIONS TO MEET LOAD REQUIREMENTS	9-20-2001	JH	LOCATION NO.					
PROJ. ENGR.									
REGIONAL ADM.	REVISION	DATE	BY						



ENGLISH
HEAVY DUTY JUNCTION BOX

TYPE 4, 5 & 6 JBOX

SHEET
1
OF
2
SHEETS



NOTES

1. ALL BOX DIMENSIONS ARE MINIMUM. EXACT CONFIGURATIONS VARY AMONG DIFFERENT MANUFACTURERS.
2. THE NOTED LID THICKNESSES ARE OVERALL MINIMUMS. THE DIAMOND PATTERN FOR TYPE 4, 5 AND 6 BOXES SHALL BE 3/32" MINIMUM THICK.
3. LID STIFFENER PLATES SHALL BEAR ON FRAME. MILL TO BEAR SEAT AND PERIMETER BAR FOR FULL EVEN CONTACT AROUND PERIMETER AFTER FABRICATION OF FRAME AND LID. LID AND FRAME UNITS WITH UNEVEN BEARING WILL BE REJECTED.
4. A 1/4" NC X 3/4" S.S. GROUND STUD WITH S.S. NUT & FLAT WASHER SHALL BE WELDED TO THE BOTTOM SIDE OF EACH LID. AS AN ALTERNATIVE, THE MANUFACTURER MAY ATTACH THE BONDING JUMPER TO THE FRONT FACE OF THE HINGE POCKET WITH A 5/16" NC X 3/4" S.S. BOLT WITH S.S. NUT AND FLAT WASHER.
5. SEE STANDARD SPECIFICATIONS 9-29.2.
6. THE HINGES SHALL ALLOW THE LIDS TO OPEN 180°.
7. ALL CONCRETE SHALL BE CLASS 4000.
8. A 1% TOLERANCE IS ALLOWED FOR ALL DIMENSIONS.
9. THE INSTALLED LID AND FRAME SHALL FIT WITH FULL EVEN CONTACT AROUND THE PERIMETER AFTER INSTALLATION. CARE SHALL BE TAKEN TO PREVENT ANY DEBRIS ACCUMULATION ON THE CONTACT SURFACES.
10. BOLTS AND NUTS SHALL BE LIBERALLY COATED WITH ANTI-SEIZE COMPOUND.
11. BONDING JUMPER ARE TINNED BRAIDED COPPER - #8 AWG MINIMUM x 4 FEET.

HEAVY DUTY TYPE 4, 5 AND 6 JUNCTION BOX (DUAL LID)
NOT TO SCALE

FILE NAME S:\414126\Electrical\MASTER FILES\DETAILS V8\Heavydutyjb.e.dgn			REGION NO. STATE		FED.AID PROJ.NO.				Washington State Department of Transportation	ENGLISH HEAVY DUTY JUNCTION BOX	PLOT12 6.41E
TIME 09:23:46 AM			10	WASH							
DATE 01/12/2005											
DESIGNED BY	RENAME JUNCTION BOX	1-11-2005	KN	JOB NUMBER							
ENTERED BY	HEIGHT CHNG 18" TO 10"	8-13-2004	JH								
CHECKED BY	HEX COUPLING NUT, BASE CHANGE 1"	7-9-2004	JH	CONTRACT NO.							
PROJ. ENGR.	REVISIONS TO MEET LOAD REQUIREMENTS	9-20-2001	JH		LOCATION NO.						
REGIONAL ADM.	REVISION	DATE	BY							TYPE 4, 5 & 6 JBOX	SHEET 2 OF 2 SHEETS

GENERAL NOTES

1. THE CABINETS SHALL BE ATTACHED TO THE FOUNDATION WITH STAINLESS STEEL CINCH BOLTS PER MANUFACTURER'S RECOMMENDATIONS. INSTALLATION SHALL BE DONE IN DRY CONDITIONS. BOLTS SHALL EXTEND A MINIMUM OF 1½" ABOVE THE CONCRETE PAD.
2. ALL REINFORCING STEEL SHALL HAVE A MINIMUM OF 2" CLEAR COVER.
3. PLACE A ½" SILICONE SEAL BETWEEN THE CABINETS AND THE FOUNDATION.
4. SEE STANDARD PLAN J-9a "TYPICAL GROUNDING DETAILS" FOR GROUNDING DETAILS. TWO GROUND RODS ARE REQUIRED.
5. INSTALL CONDUIT AS INDICATED IN PLANS. CONDUIT SHALL EXTEND 2" ABOVE THE FOUNDATION.
6. CONCRETE SHALL BE CLASS 3000.

- 1 DRIVE GROUND RODS BEFORE PLACING CONCRETE. MOVE ROD(S) AND DRAIN TILE(S) WITH COVER(S) AS REQUIRED TO ACHIEVE FULL GROUND PENETRATION. MAINTAIN A 6" MINIMUM CLEARANCE BETWEEN GROUND RODS AS DETAILED ON STD. PLAN J-9a "TYPICAL GROUNDING DETAILS".
- 2 ALL CONDUIT PENETRATING CABINET SHALL BE TERMINATED WITH GROUNDING END BUSHING AND BONDED TO THE CABINET GROUNDING BUS.
- 3 INSTALL CONDUIT COUPLINGS ON ALL CONDUITS. PLACE COUPLINGS FLUSH WITH TOP OF CONCRETE FOUNDATION.

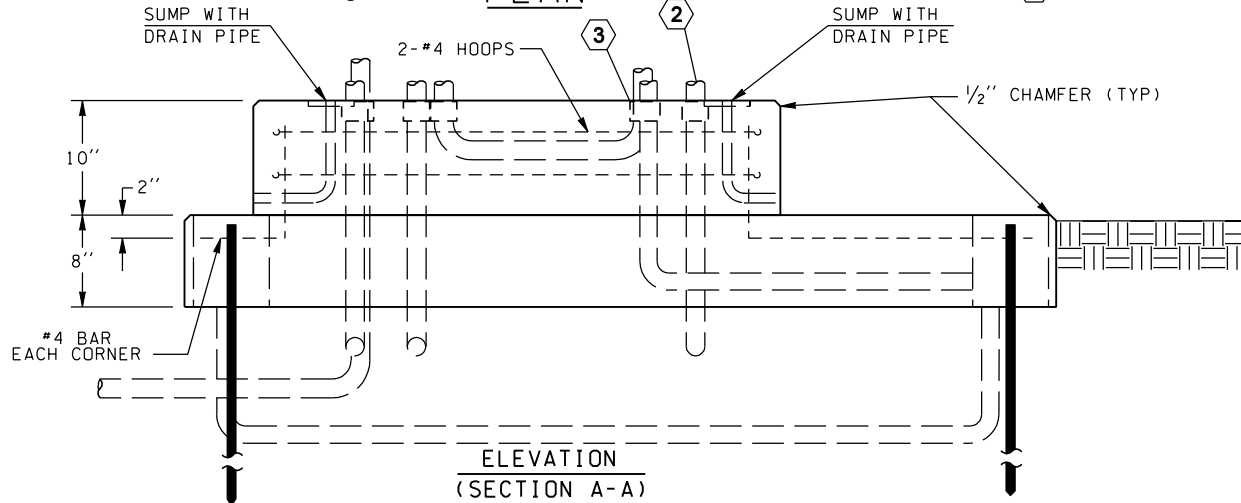



Diagram illustrating the Plan view of a cabinet base. The overall dimensions are 24" x 24". The base is reinforced with #4 bars and #4 hoops. The diagram shows the location of the cabinet base, the controller cabinet, and the front panel. The reinforcement details include 2 - #4 hoops and #4 bars at each corner. The diagram also shows the location of the cabinet base and the controller cabinet. The reinforcement details include 2 - #4 hoops and #4 bars at each corner. The diagram also shows the location of the cabinet base and the controller cabinet. The reinforcement details include 2 - #4 hoops and #4 bars at each corner.

FILE NAME s:\414126\Electrical\MASTER_FILES\DETAILS\CONTROL_E.DGN										 Washington State Department of Transportation		SIGNAL CONTROLLER CABINET AND TRANSFORMER ON PAD FOUNDATION		PLOT1	
TIME 01:05:45 PM		TITLE CHNG, NOTE EDITS		11-20-02 JH		REGION NO. STATE		FED.AID PROJ.NO.						8.01E	
DATE 01/21/2003		COMBINED BOTH FOUND. DETAILS TOGETHER		10-14-02 JH		10 WASH									
		DGN TO SCALE, MOVED CAB		9-25-02 JH											
DESIGNED BY		TITLE CHANGE		7-16-02 JH		JOB NUMBER									
ENTERED BY		CLEAN UP DIMENSIONS		6-5-02 JH								SHEET			
CHECKED BY		GENERAL NOTE #4		7-26-99 JH		CONTRACT NO.		LOCATION NO.				OF			
PROJ. ENGR.		ADDED "TYPE 322"		1-12-99 JH								SHEETS			
REGIONAL ADM.		REVISION		DATE		BY									



1. FIELD VERIFY BOLT PATTERN & LOCATION PRIOR TO FABRICATION.
2. GROOVE SIZE AND FILLET SIZE ARE EQUAL TO MATERIAL THICKNESS.
- * 0.125 INCH SHEET ALUMINUM (5052-H32), MINIMUM THICKNESS.

GTAW = TIG WELDS

FILE NAME S:\41426\Electrical\MASTER_FILES\DETAILS V8\Ccabinetriser.dgn										PLOT1					
TIME	07:26:01 AM				REGION NO.	STATE	FED.AID PROJ.NO.			8.20E					
DATE	01/11/2005				10	WASH									
PLOTTED BY	trinhha				JOB NUMBER										
DESIGNED BY	T. THAYER				CONTRACT NO.		LOCATION NO.			SHEET					
ENTERED BY	K. NGUYEN														
CHECKED BY										OF					
PROJ. ENGR.										SHEETS					
REGIONAL ADM.		REVISION	DATE	BY			DATE		DATE		CONTROLLER CABINET RISER DETAILS				
										P.E. STAMP BOX		P.E. STAMP BOX			




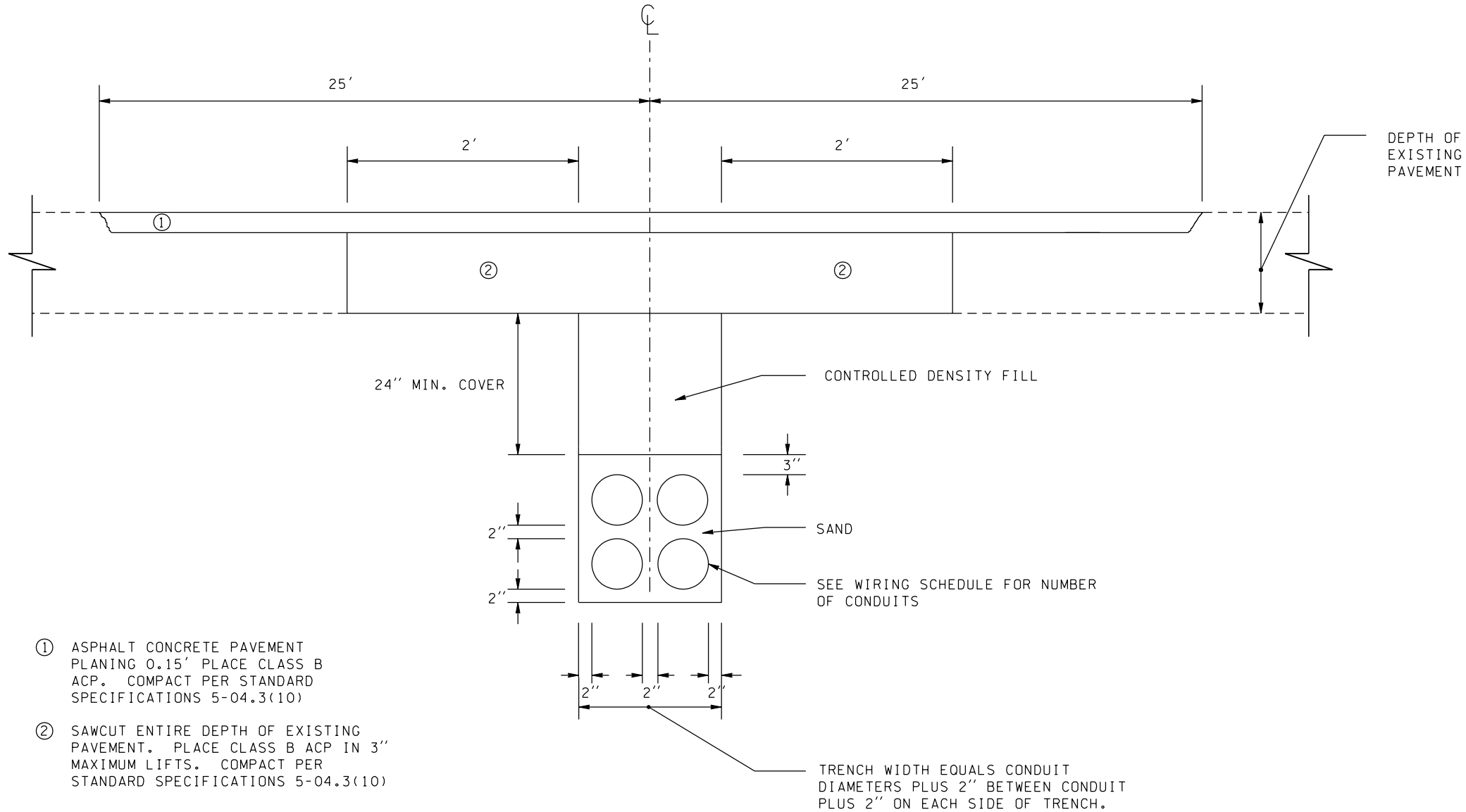
1. $\frac{1}{2}$ " CHAMFER ALL EXPOSED CORNERS.
2. ADJUST WALL HEIGHT TO MATCH SLOPE OF FINAL GRADE.
3. ADJUST REINFORCING FOR WALL HEIGHT.
4. FOR FENCE DETAILS SEE STANDARD PLAN L-2.
5. FOR CONCRETE STAIRWAY AND RAILING DETAILS SEE STANDARD PLAN H-10.
6. THE CABINETS SHALL BE ATTACHED TO THE FOUNDATION WITH STAINLESS STEEL CINCH BOLTS PER MANUFACTURER'S RECOMMENDATIONS. BOLT SHALL EXTEND A MINIMUM OF $1\frac{1}{2}$ " ABOVE THE CONCRETE PAD.
7. SEAL THE CABINETS TO THE FOUNDATION WITH A 14 SILICONE BEAD.
8. FOR GROUNDING DETAILS SEE STANDARD PLAN J-9A.
9. INSTALL CONDUIT AS INDICATED IN PLANS. CONDUIT SHALL EXTEND 2" ABOVE THE FOUNDATION.
10. CONCRETE SHALL BE CLASS 3000 FOR WALLS AND BASE.
11. CONCRETE SHALL BE CLASS 4000 FOR STAIRS AND LANDINGS.




CONTROLLER AND SERVICE CABINET FOUNDATION DETAIL

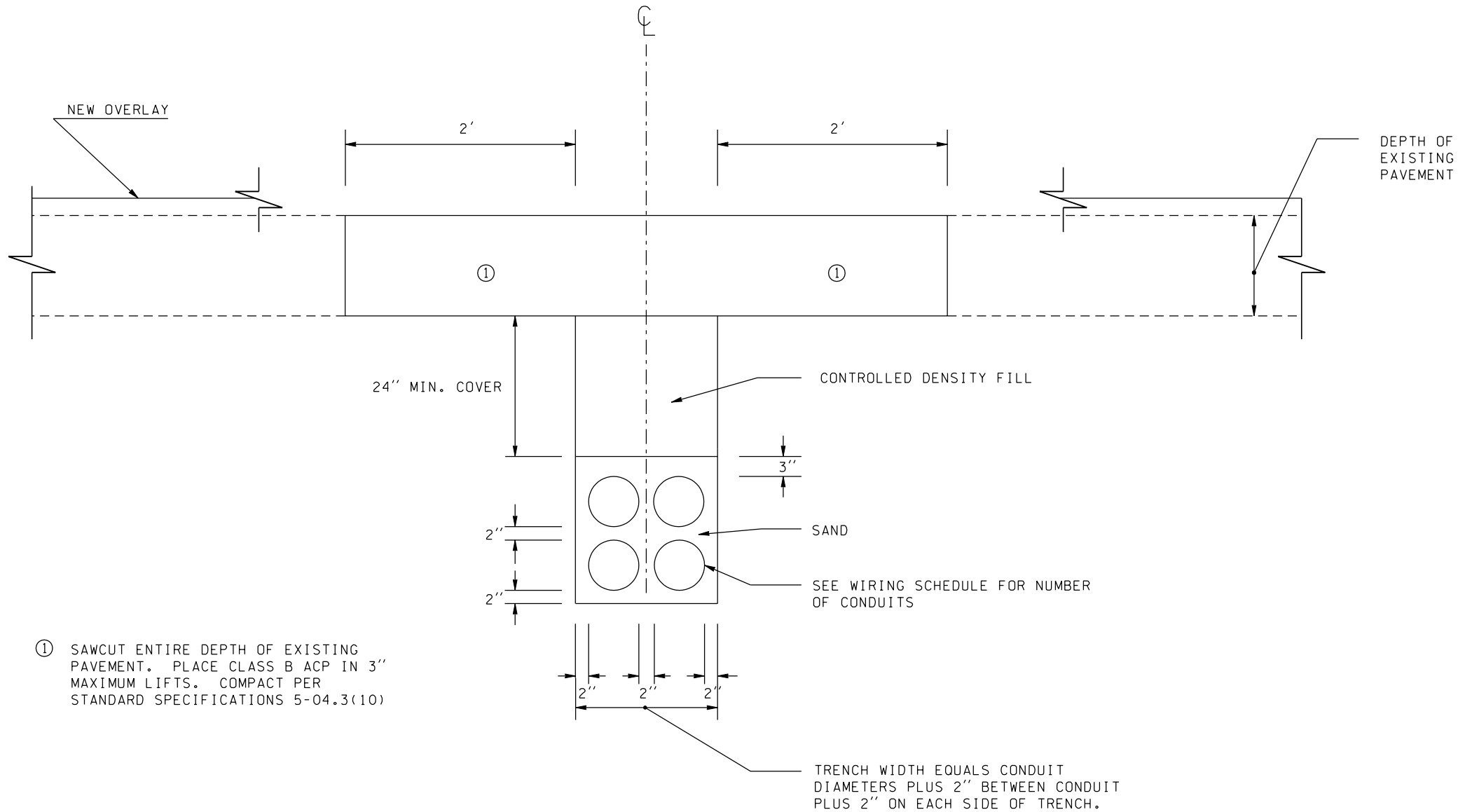


					REGION NO.	STATE	FED.AID PROJ.NO.	ENVIRONMENTAL AND ENGINEERING SERVICE CENTER	 Washington State Department of Transportation	ENGLISH	8.30E
DESIGNED BY T. THAYER					10	WASH					
ENTERED BY J. HARVEY					JOB NUMBER						
CHECKED BY											
PROJ. ENGR.											
REGIONAL ADM.		3-23-00	NEW DETAIL	JH	CONTRACT NO.					CONTROLLER & SERVICE CABINET W/FENCE	OF SHEETS
	DATE	DATE	REVISION	BY							




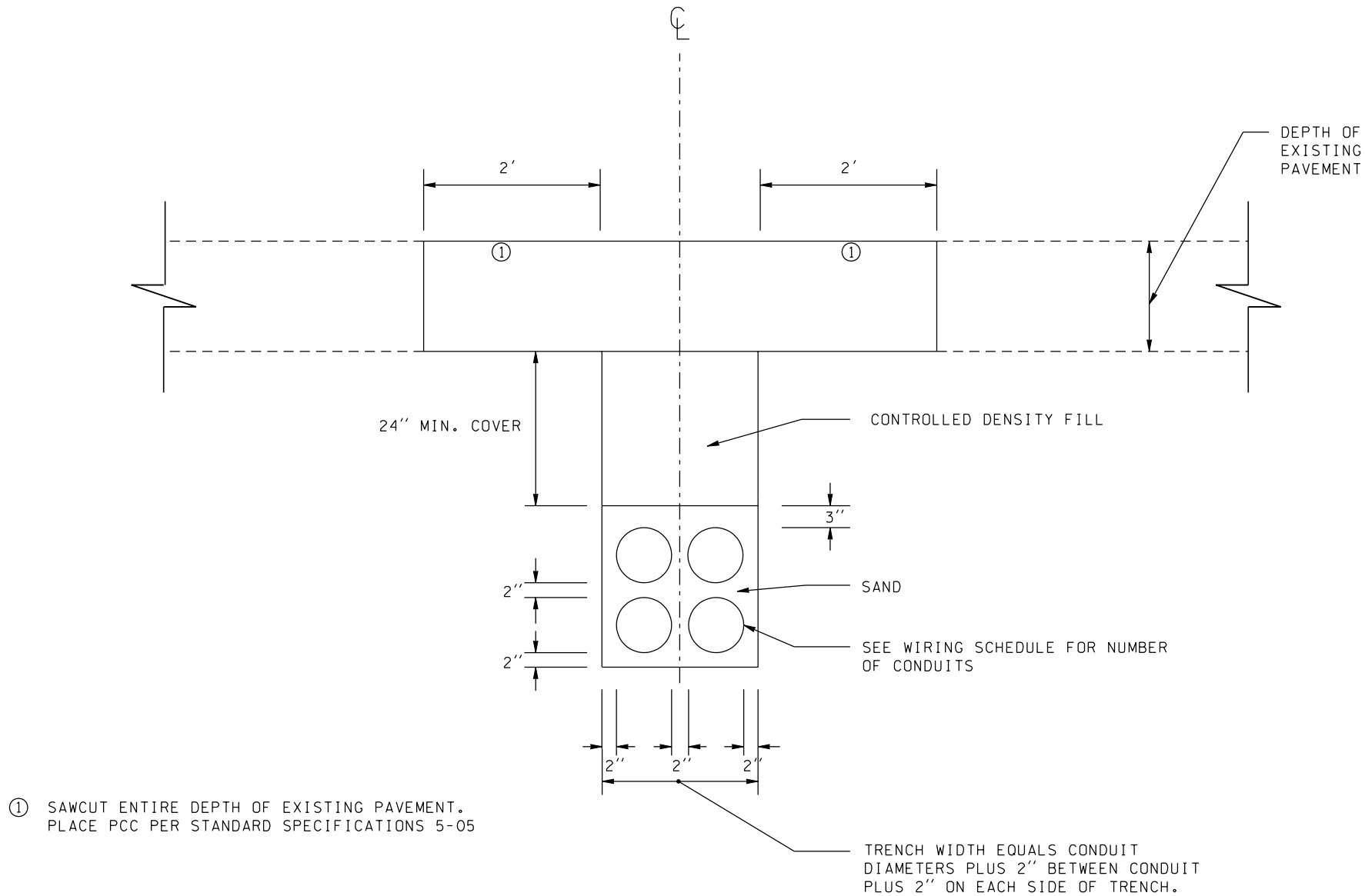
TRENCHING DETAIL-ACP NO OVERLAY
(NOT TO SCALE)

				REGION NO.	STATE	FED.AID PROJ.NO.	ENVIRONMENTAL AND ENGINEERING SERVICE CENTER	 Washington State Department of Transportation	ENGLISH		9.01E
DESIGNED BY	WSDOT			10	WASH						SHEET
ENTERED BY	WSDOT	2-1-99	CENTERLIN /TEXT	JH	JOB NUMBER						OF
CHECKED BY	WSDOT	6-23-98	TRENCH DETAIL- "OVERLAY"	JH	CONTRACT NO.						SHEETS
PROJ. ENGR.		5-19-98	TRENCH DETAIL- "ACP"	JH							
REGIONAL ADM.		4-25-97	"ASPHALT CONCRETE PAVEMENT"	BK							
	DATE	DATE	REVISION	BY					ROADWAY TRENCH DETAIL		




TRENCHING DETAIL-ACP OVERLAY
(NOT TO SCALE)

					REGION NO.	STATE	FED.AID PROJ.NO.	ENVIRONMENTAL AND ENGINEERING SERVICE CENTER	 Washington State Department of Transportation	ENGLISH	9.02E	
DESIGNED BY	WSDOT				10	WASH						
ENTERED BY	WSDOT											SHEET
CHECKED BY	WSDOT	2-1-99	CENTERLINE /TEXT	JH	JOB NUMBER							
PROJ. ENGR.		12/10/98	"NEW OVERLAY"	JH								
REGIONAL ADM.		6-23-98	NEW DETAIL- "NO OVERLAY"	JH	CONTRACT NO.							OF
	DATE	DATE	REVISION	BY						ROADWAY TRENCH DETAIL	SHEETS	



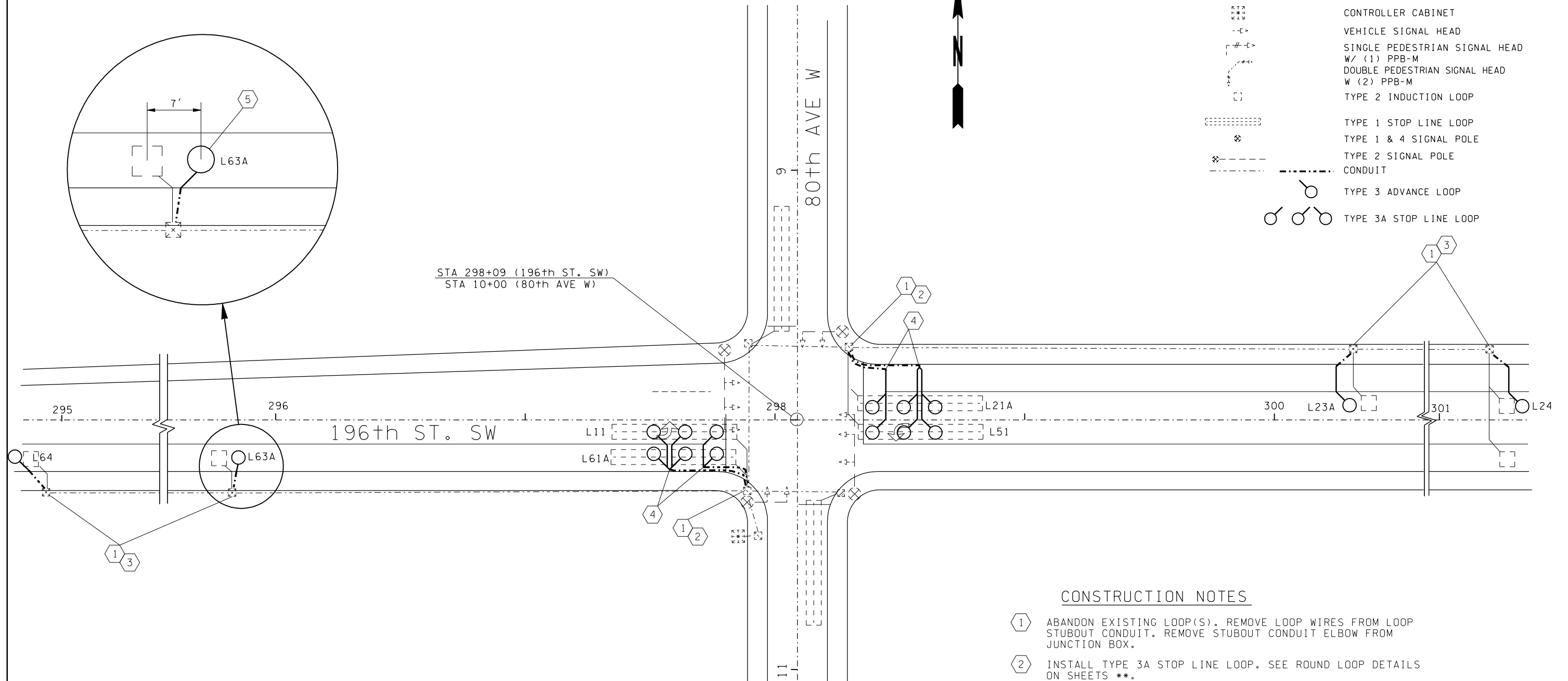
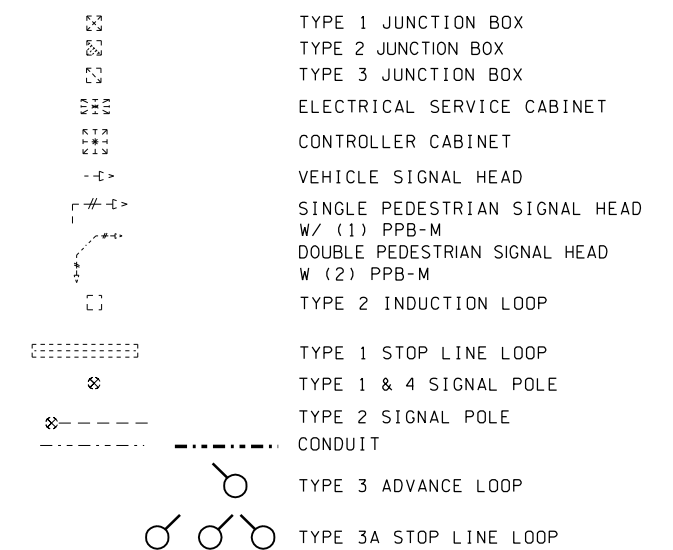
TRENCHING DETAIL-PCC
(NOT TO SCALE)

					REGION NO.	STATE	FED.AID PROJ.NO.	ENVIRONMENTAL AND ENGINEERING SERVICE CENTER	 Washington State Department of Transportation	ENGLISH		9.03E
DESIGNED BY	WSDOT				10	WASH						SHEET
ENTERED BY	WSDOT											OF
CHECKED BY	WSDOT	2-1-99	CENTERLINE /TEXT	JH								SHEETS
PROJ. ENGR.		6-23-98	NEW SHEET NUMBER	JH								
REGIONAL ADM.		5-19-98	MODIFIED "ACP" TO "PCC"	JH								
	DATE	DATE	REVISION	BY						ROADWAY TRENCH DETAIL		

T.27N. R.4E. W.M.

LEGEND

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CONSTRUCTION NOTES

- 1 ABANDON EXISTING LOOP(S). REMOVE LOOP WIRES FROM LOOP STUBOUT CONDUIT. REMOVE STUBOUT CONDUIT ELBOW FROM JUNCTION BOX.
- 2 INSTALL TYPE 3A STOP LINE LOOP. SEE ROUND LOOP DETAILS ON SHEETS **.
- 3 INSTALL TYPE 3 ADVANCE LOOP. SEE ROUND LOOP DETAILS ON SHEETS **.
- 4 SAWCUT DIRECTLY TOWARD EDGE OF PAVED SHOULDER AND ROUTE LOOPWIRE THROUGH STUBOUT CONDUIT FROM THIS LOCATION TO JUNCTION BOX. SEE ROUND LOOP DETAILS FOR STUBOUT LOCATION RELATIVE TO EDGE OF PAVED SHOULDER.
- 5 INSTALL TYPE 3 ADVANCE LOOP IN FRONT OF OR BEHIND EXISTING LOOP ON STATION.

0 20 40
SCALE IN FEET

FILE NAME S:\41426\Electrical\MASTER_FILES\DETAILS V8\loopsmpl.dgn										PLOT1	
TIME 02:23:00 PM					REGION NO.	STATE	FED.AID PROJ.NO.				
DATE 11/18/2004					10	WASH					
	ADDED DETAIL	11-18-04	KN	JOB NUMBER		LOCATION NO.					
DESIGNED BY	REVISED TYPE 3 ADVANCE LOOP	11-18-04	KN								
ENTERED BY	REVISED CONSTRUCTION NOTE AND LEGEND	11-18-04	KN	CONTRACT NO.							
CHECKED BY	NEW SHEET PLACEMENT	4-16-03	JH								
PROJ. ENGR.	new detail	10-7-99	JH								
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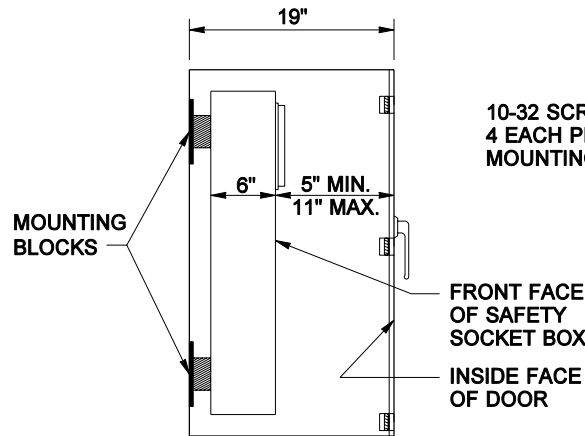
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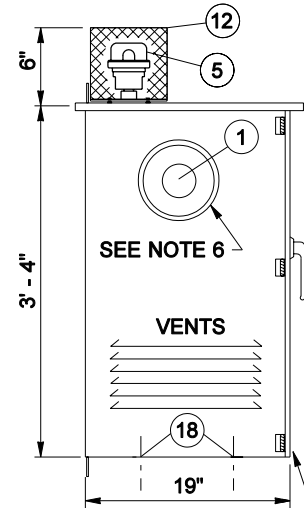
GENERAL NOTES

200 AMP TYPE 120/240 1Ø SERVICE CABINET

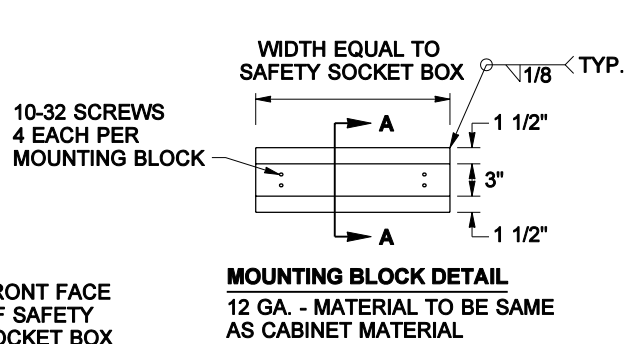
1. SEE STANDARD SPECIFICATION 9-29.24, SERVICE CABINETS.
2. HINGES SHALL HAVE STAINLESS STEEL OR BRASS PINS.
3. CABINETS SHALL BE RATED NEMA 3R AND SHALL INCLUDE TWO RAIN TIGHT VENTS.
4. METERING EQUIPMENT DOOR SHALL BE PAD LOCKABLE. EACH DOOR SHALL BE GASKETED. INSTALL BEST CX CONSTRUCTION CORE ON RIGHT DOOR. SEE DOOR HINGE DETAIL, SHEET 1 OF 2.
5. THE FOLLOWING EQUIPMENT WITHIN THE SERVICE ENCLOSURE SHALL HAVE AN APPROPRIATELY ENGRAVED PHENOLIC NAME PLATE ATTACHED WITH SCREWS OR RIVETS: KEY NUMBERS 2, 3, 4, 6, 7, 8, 9 AND 16. KEY NUMBER 4 NAME PLATE SHALL READ: "PHOTOCELL BYPASS TEST ON" AND "PHOTOCELL TEST OFF- AUTOMATIC". SEE SERVICE CABINET DETAIL.
6. METERING ARRANGEMENTS VARY WITH DIFFERENT SERVING UTILITIES. THE UTILITY MAY REQUIRE METER BASE MOUNTING IN THE ENCLOSURE, ON THE SIDE OR ON THE BACK OF THE ENCLOSURE. THE UTILITY MAY REQUIRE THE DIMENSION BETWEEN THE DOOR AND THE FRONT OF THE SAFETY SOCKET BOX TO BE LESS THAN THE 11 INCHES SHOWN IN THE LEFT SIDE- SAFETY SOCKET BOX MOUNTING DETAIL. THE CONTRACTOR SHALL VERIFY THE SERVING UTILITY'S REQUIREMENTS PRIOR TO FABRICATION OF AND INSTALLING THE SERVICE EQUIPMENT.
7. DIMENSIONS SHOWN ARE MINIMUM AND SHALL BE ADJUSTED TO ACCOMMODATE THE VARIOUS SIZES OF EQUIPMENT INSTALLED.
8. ALL BUSSWORK SHALL BE HIGH GRADE COPPER AND SHALL EQUAL OR EXCEED THE MAIN BREAKER RATING. ALL BREAKERS SHALL BOLT ONTO THE BUSSWORK. JUMPERING OF BREAKERS SHALL NOT BE ALLOWED. BUSSWORK SHALL ACCOMMODATE ALL FUTURE EQUIPMENT AS SHOWN IN THE BREAKER SCHEDULE.
9. THE PHOTOCELL UNIT SHALL BE CENTERED IN THE PHOTOCELL ENCLOSURE TO PERMIT 360 DEGREE ROTATION OF THE PHOTOCELL WITHOUT REMOVAL OF THE PHOTOCELL UNIT OR THE PHOTOCELL ENCLOSURE.
10. ALL INTERNAL WIRE RUNS SHALL BE IDENTIFIED WITH "TO - FROM" CODED TAGS LABELED WITH THE CODE LETTERS AND/OR NUMBERS SHOWN ON THE SCHEDULES. APPROVED PVC OR POLYOLEFIN WIRE MARKING SLEEVES SHALL BE USED.
11. ALL NUTS, BOLTS AND WASHERS USED FOR MOUNTING THE PHOTOCELL ENCLOSURE SHALL BE STAINLESS STEEL.
12. A 1% TOLERANCE IS ALLOWED FOR ALL DIMENSIONS.
13. UNISTRUT TYPE CHANNEL AND MOUNTING HARDWARE COMPONENTS SHALL BE STAINLESS STEEL. CONDUIT CLAMPS SHALL BE HOT DIPPED, GALVANIZED STEEL OR STAINLESS STEEL.
14. INSTALL CONDUIT COUPLINGS ON ALL CONDUITS. PLACE COUPLINGS FLUSH WITH TOP OF CONCRETE FOUNDATION.
15. NOTE 15 HAS BEEN DELETED.
16. THE METER BASE PORTION OF THIS SERVICE WAS DESIGNED TO MEET METERING PORTION OF EUSERC DRAWING 309 REQUIREMENTS.
17. WHEN USING ALTERNATE DOOR HINGE: REMOVE HINGE PIN PRIOR TO WELDING HINGE TO CABINET AND PRIOR TO HOT DIP GALVANIZING CABINET. AFTER GALVANIZING, REPLACE PIN WITH BRASS PIN AND SOLDER IN PLACE.



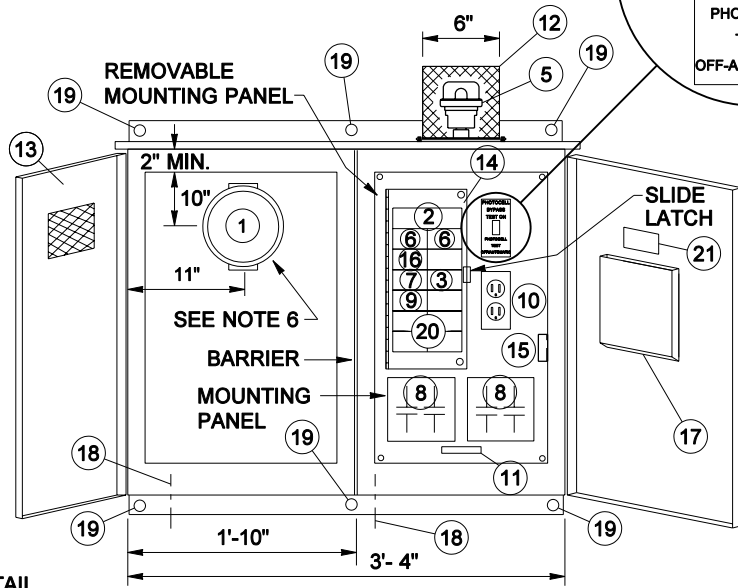
LEFT SIDE- SAFETY SOCKET BOX MOUNTING DETAIL
FABRICATE MOUNTING BLOCKS AFTER VERIFYING THE SERVICE UTILITY STAND OFF DIMENSION.



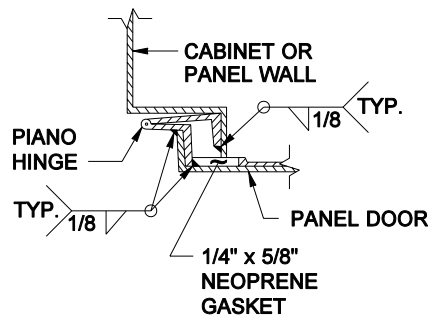
LEFT SIDE



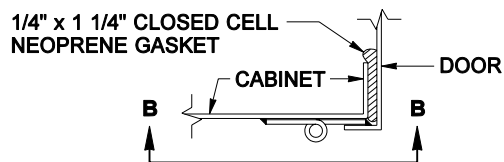
SERVICE CABINET DETAIL



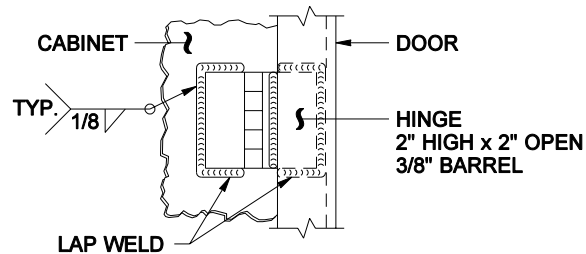
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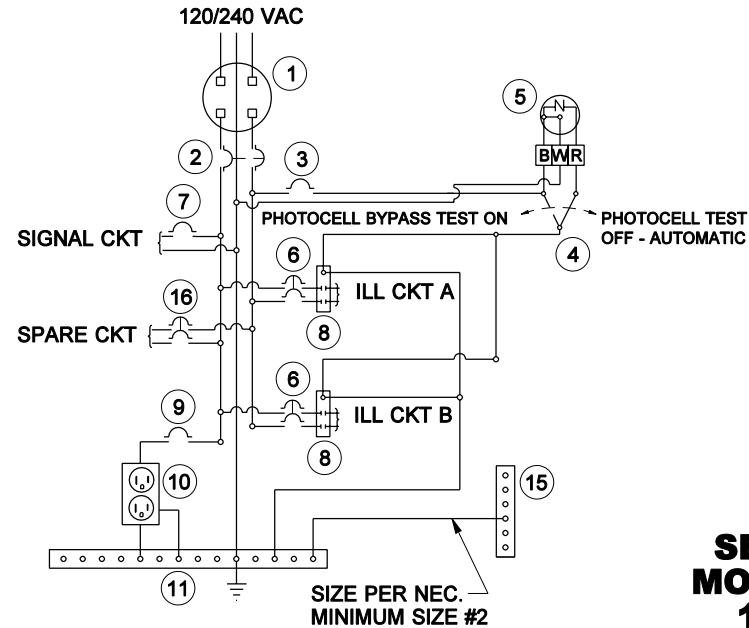
DOOR HINGE DETAIL



DOOR HINGE DETAIL
ALTERNATE FOR TYPE B MODIFIED CABINET
SEE NOTE 17



VIEW B-B



WIRING SCHEMATIC

KEY

1. METER BASE PER SERVING UTILITY REQUIREMENTS. AS A MINIMUM, THE METER BASE SHALL BE SAFETY SOCKET BOX WITH FACTORY INSTALLED TEST BYPASS FACILITY THAT MEETS THE REQUIREMENTS OF EUSERC DRAWING 305.
2. MAIN BREAKER (SEE BREAKER SCHEDULE)
3. PHOTOCELL BREAKER (SPST 15 AMP - 120/240 VOLT)
4. TEST SWITCH (SPDT SNAP ACTION, POSITIVE CLOSE 15 AMP - 120/277 VOLT - "T" RATED)
5. PHOTOELECTRIC CONTROL, STD. SPEC. 9 - 29.11(2)
6. BRANCH BREAKER (SEE BREAKER SCHEDULE)
7. SIGNAL BREAKER (SEE BREAKER SCHEDULE)
8. CONTACTOR (SEE BREAKER SCHEDULE)
9. RECEPTACLE BREAKER (SPST 20 AMP - 120/240 VOLT)
10. RECEPTACLE, GROUNDED (GFCI 20 AMP - 125 VOLT)
11. NEUTRAL BUSS, 14 LUG COPPER
12. PHOTOCELL ENCLOSURE - ENCLOSURE TO BE FABRICATED FROM 5/8" EXPANDED STEEL MESH WITH WELDED SEAMS AND MOUNTING FLANGES. HOT DIP GALVANIZED AFTER FABRICATION. TYPE 5052 - H32 ALUMINUM WITH 5/8" x 5/8" OPENINGS EQUIVALENT TO 5/8" EXPANDED STEEL MESH MAY BE USED AS ALTERNATIVE MATERIAL. SEE PHOTOCELL ENCLOSURE MOUNTING DETAIL, SHEET 2 OF 2.
13. HINGED FRONT FACING DOOR WITH 4" x 4" MIN. POLISHED WIRE GLASS WINDOW.
14. HINGED DEAD FRONT WITH 1/4 TURN FASTENERS OR SLIDE LATCH.
15. CABINET MAIN BONDING JUMPER. BUSS SHALL BE 4 LUG TINNED COPPER. SEE CABINET MAIN BONDING JUMPER DETAIL ON SHEET 2 OF 2.
16. SPARE BRANCH BREAKER (DPST 20AMP- 120/240 VOLT)
17. METAL WIRING DIAGRAM HOLDER
18. 1/4" DIAMETER DRAIN HOLE. DRILL BEFORE GALVANIZING.
19. MOUNTING HOLE. SEE SERVICE CABINET MOUNTING DETAILS.
20. 18 CIRCUIT PANEL BOARD - MINIMUM SIZE WITH SEPARATE MAIN BREAKER.
21. LABEL CABINET WITH BUSSWORK RATING.



EXPIRES MAY 5, 2005

SERVICE CABINET TYPE B
MODIFIED (0 - 200 AMP TYPE
120/240 SINGLE PHASE)
STANDARD PLAN J-3b

SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION

Harold J. Peterfeso 11-05-03

STATE DESIGN ENGINEER

DATE



Washington State Department of Transportation

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

09/2003

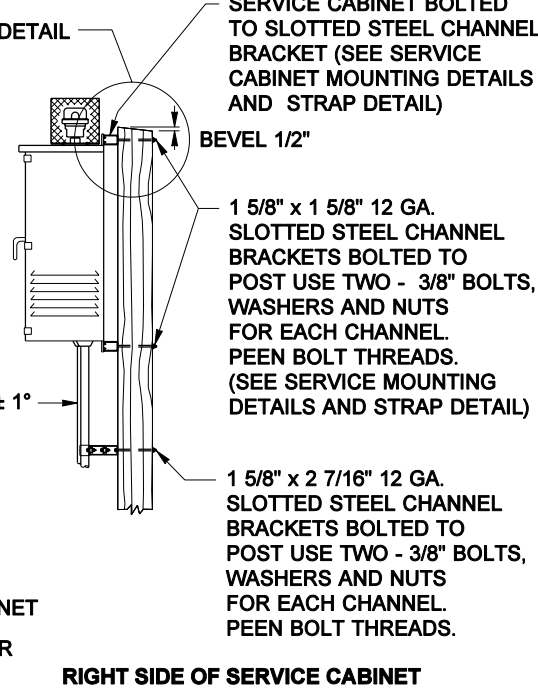
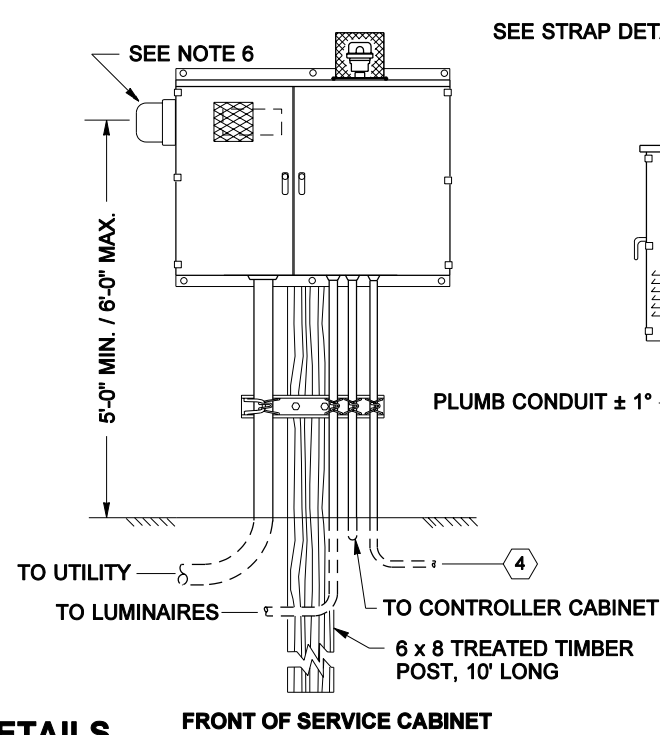
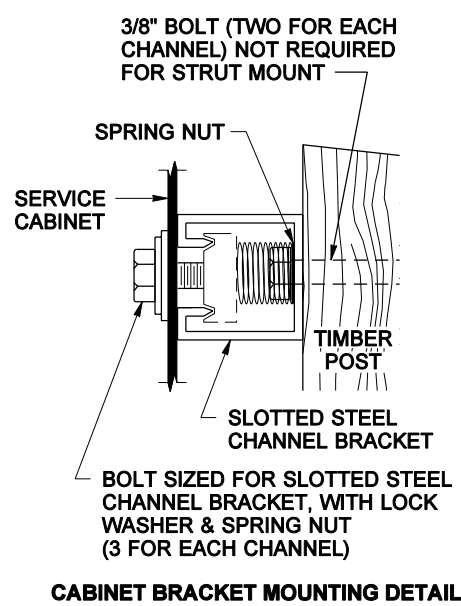
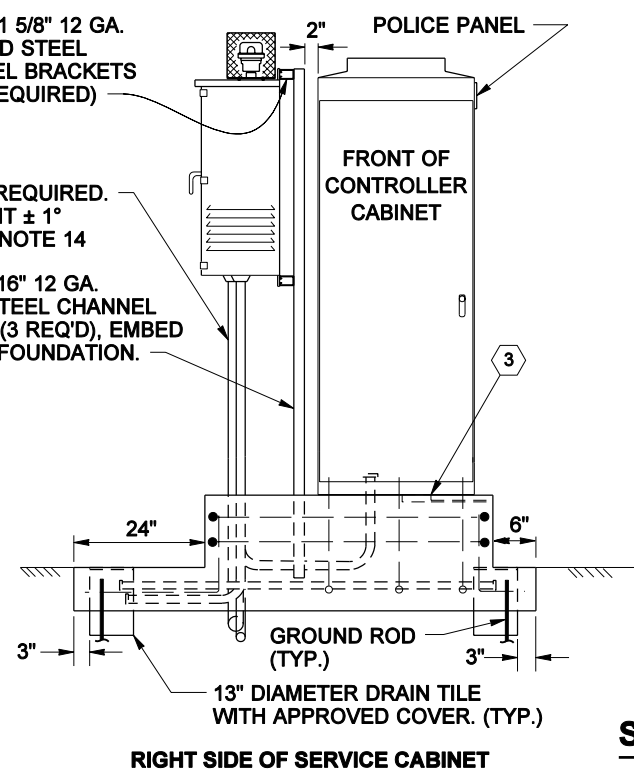
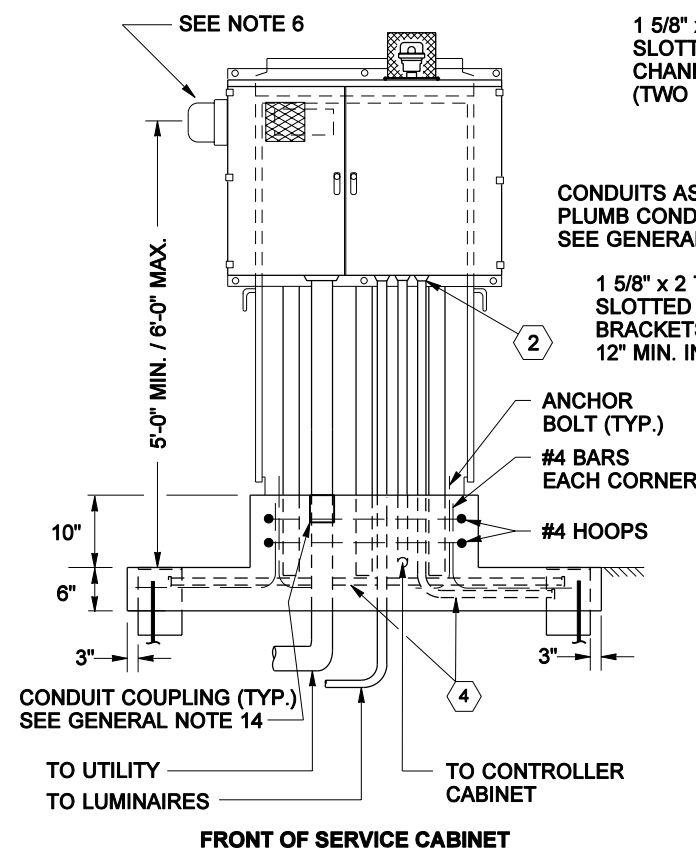
REVISED NOTE 13

MHG

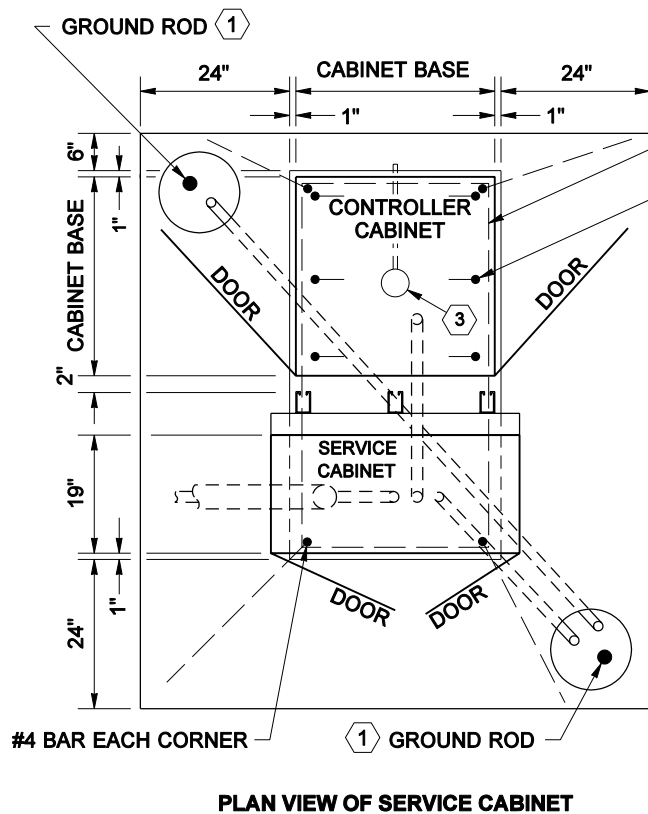
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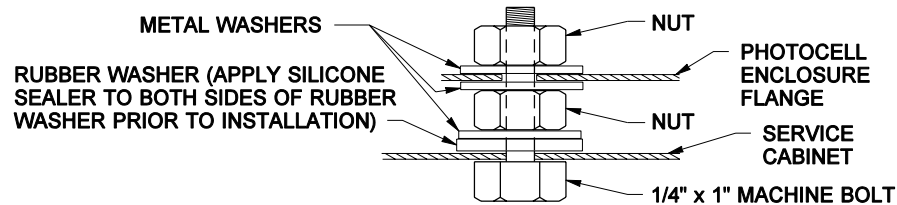
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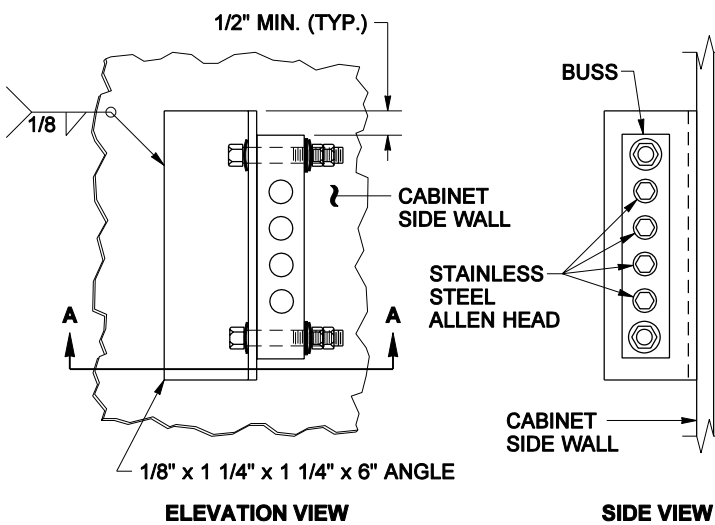
STRUT MOUNT



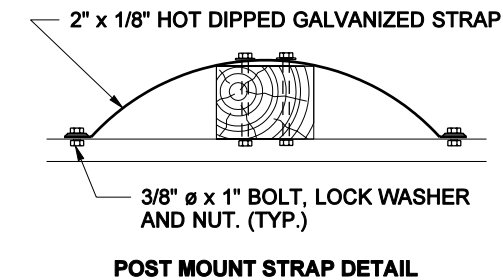
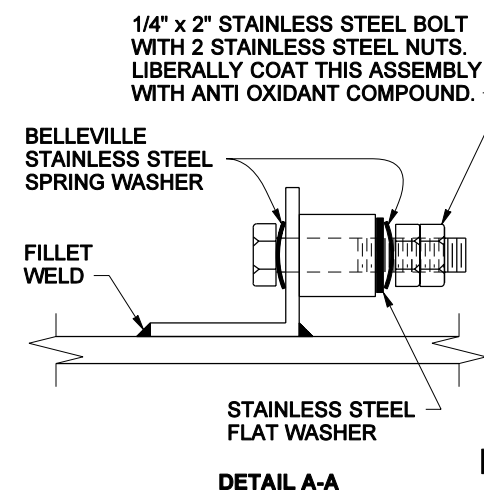
- TWO #4 HOOPS
- ANCHOR BOLT (TYP.)
- SEE STANDARD PLAN J-6c "CABINET FOUNDATION DETAILS", FOR DETAILS NOT SHOWN.
- ① DRIVE GROUND RODS BEFORE PLACING CONCRETE. MOVE ROD(S) AND DRAIN TILE(S) WITH COVER(S) AS REQUIRED TO ACHIEVE FULL GROUND PENETRATION. MAINTAIN A 6" MINIMUM CLEARANCE BETWEEN GROUND RODS AS DETAILED ON STD. PLAN J-9a "TYPICAL GROUNDING DETAILS".
 - ② ALL CONDUITS PENETRATING CABINET SHALL BE TERMINATED WITH GROUNDING END BUSHING AND BONDED TO THE CABINET GROUNDING BUS.
 - ③ 4" DIAM. x 1/2" DEEP SUMP. SLOPE FOUNDATION TOWARDS SUMP. 3/8" DIAM. POLYETHYLENE OR COPPER DRAIN PIPE. SLOPE TO DRAIN OUTSIDE FOUNDATION.
 - ④ TO SERVICE GROUND - PER STD. PLAN J-9a "TYPICAL GROUNDING DETAILS"



PHOTOCELL ENCLOSURE MOUNTING DETAIL



CABINET MAIN BONDING JUMPER DETAIL



POST MOUNT



SERVICE CABINET TYPE B MODIFIED (0 - 200 AMP TYPE 120/240 SINGLE PHASE) STANDARD PLAN J-3b

SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION

Harold J. Peterfeso 11-05-03

STATE DESIGN ENGINEER

DATE

Washington State Department of Transportation

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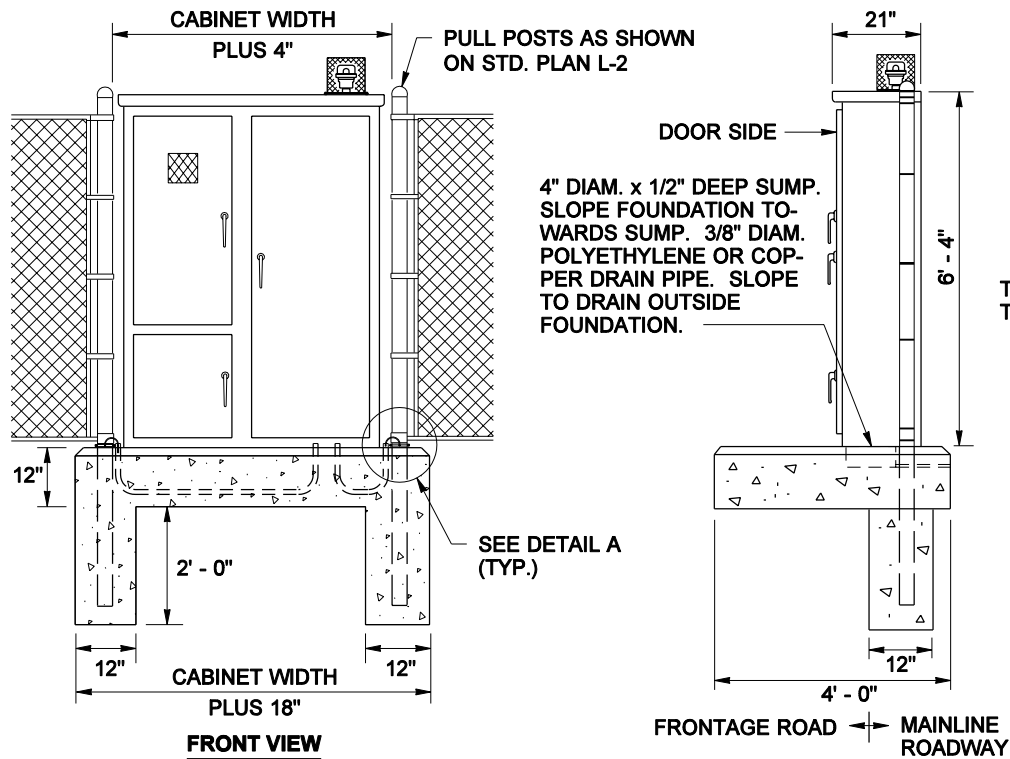
REVISED SERVICE CABINET MOUNTING DETAIL

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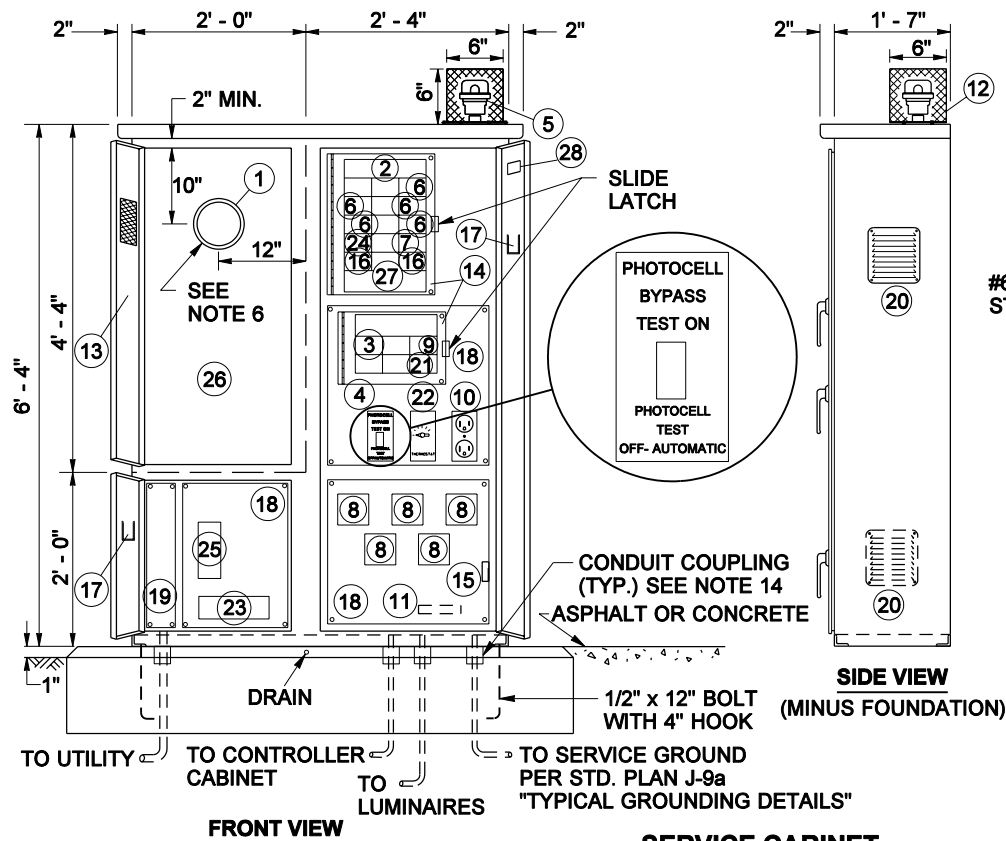
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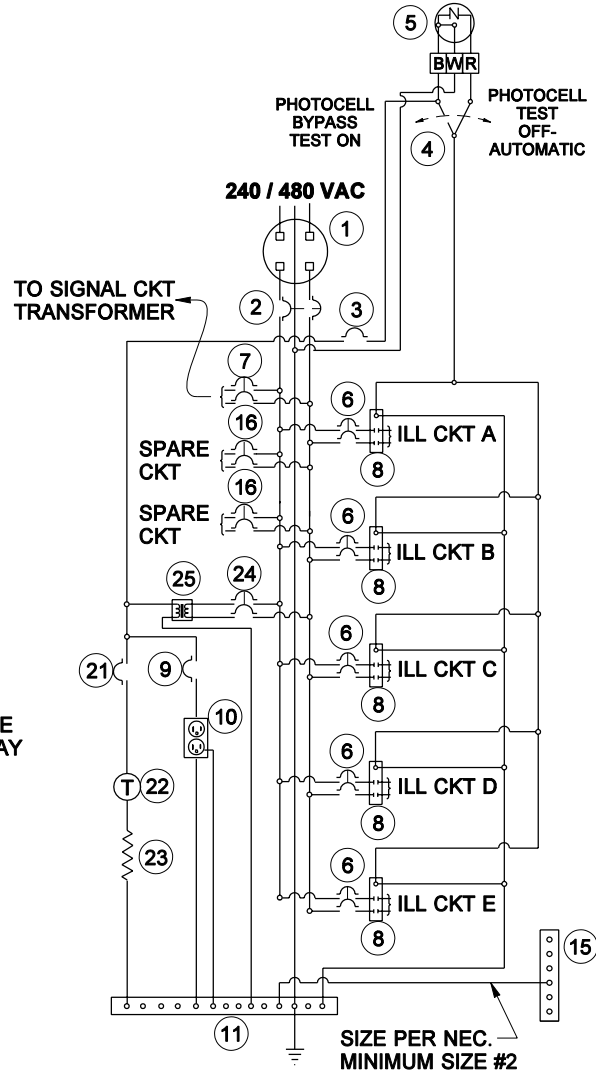


NOTE: INSTALL FOUNDATION AS SLAB SECTION UNLESS IDENTIFIED FOR CONSTRUCTION IN FENCE LINE IN CONTRACT PLANS.

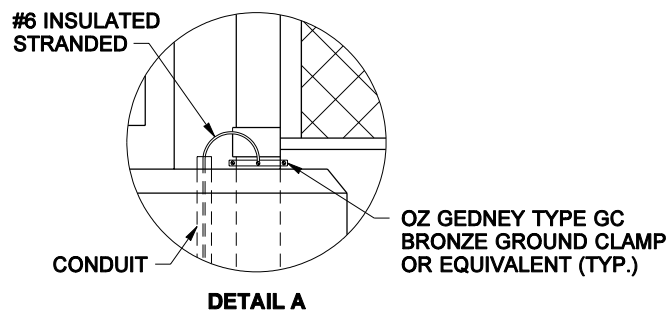
INSTALLATION DETAIL



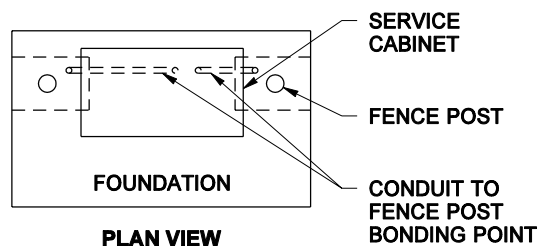
SERVICE CABINET



WIRING SCHEMATIC



DETAIL A



PLAN VIEW

KEY

- METER BASE PER SERVING UTILITY REQUIREMENTS. AS A MINIMUM, THE METER BASE SHALL BE SAFETY SOCKET BOX WITH FACTORY INSTALLED TEST BYPASS FACILITY THAT MEETS THE REQUIREMENTS OF EUSERC DRAWING 305.
 - MAIN BREAKER (SEE BREAKER SCHEDULE)
 - PHOTOCELL BREAKER (SPST 15 AMP - 120/240 VOLT)
 - TEST SWITCH (SPDT SNAP ACTION, POSITIVE CLOSE 15 AMP - 120/277 VOLT "T" RATED)
 - PHOTOELECTRIC CONTROL, STD. SPEC. 9 - 29.11(2)
 - BRANCH BREAKER (SEE BREAKER SCHEDULE)
 - SIGNAL TRANSFORMER BREAKER (SEE BREAKER SCHEDULE)
 - CONTACTOR (SEE BREAKER SCHEDULE)
 - RECEPTACLE BREAKER (SPST 20 AMP - 120/240 VOLT)
 - RECEPTACLE, GROUNDED (GFCI 20 AMP - 125 VOLT)
 - NEUTRAL BUSS, 14 LUG COPPER
 - PHOTOCELL ENCLOSURE - ENCLOSURE TO BE FABRICATED FROM 5/8" EXPANDED STEEL MESH WITH WELDED SEAMS AND MOUNTING FLANGES. HOT DIP GALVANIZED AFTER FABRICATION. TYPE 5052 - H32 ALUMINUM WITH 5/8" x 5/8" OPENINGS EQUIVALENT TO 5/8" EXPANDED STEEL MESH MAY BE USED AS ALTERNATIVE MATERIAL. SEE PHOTOCELL ENCLOSURE MOUNTING DETAILS, STANDARD PLAN J-3b.
 - HINGED FRONT FACING DOOR WITH 4" x 4" MIN. POLISHED WIRE GLASS WINDOW.
 - HINGED DEAD FRONT WITH 1/4 TURN FASTENERS OR SLIDE LATCH
 - CABINET MAIN BONDING JUMPER. BUSS SHALL BE 4 LUG TINNED COPPER. SEE CABINET MAIN BONDING JUMPER DETAIL, STANDARD PLAN J-3b.
 - SPARE BRANCH BREAKER (DPST 20AMP- 240/480 VOLT)
 - METAL WIRING DIAGRAM HOLDER
 - REMOVABLE EQUIPMENT MOUNTING PAN
 - 6" x 6" MIN. UNDERGROUND FEED - SERVICE WIREWAY (LEFT REAR CORNER)
 - SCREENED VENTS, 2 REQUIRED, 1 EACH SIDE, LOUVERED PLATES
 - HEATER BREAKER (SPST 15 AMP - 120/240 VOLT)
 - THERMOSTAT, 40°F CLOSURE - 3 DIFFERENTIAL
 - STRIP HEATER (100 WATT NOMINAL), WITH TERMINAL STRIP COVER
 - TRANSFORMER BREAKER (DPST 15 AMP - 480 VOLT)
 - DRY TRANSFORMER (480/120 VOLT) 3 KVA COPPER BUSSED AND COPPER WOUND
 - RESERVED FOR METER, CURRENT TRANSFORMER AND/OR DISCONNECT SWITCH AS REQUIRED BY THE UTILITY
 - 24 CIRCUIT PANEL BOARD - MINIMUM SIZE WITH SEPARATE MAIN BREAKER.
 - LABEL CABINET WITH BUSSWORK RATING
- THE FOLLOWING EQUIPMENT WITHIN THE SERVICE ENCLOSURE SHALL HAVE AN APPROPRIATELY ENGRAVED PHENOLIC NAME PLATE ATTACHED WITH SCREWS OR RIVETS: KEY NUMBERS 2, 3, 4, 6, 7, 8, 9, 16, 21 AND 25. KEY NUMBER 4 NAME PLATE SHALL READ: "PHOTOCELL BYPASS TEST ON" AND "PHOTOCELL TEST OFF- AUTOMATIC". SEE SERVICE CABINET DETAIL.
 - METERING ARRANGEMENTS VARY WITH DIFFERENT SERVING UTILITIES. THE UTILITY MAY REQUIRE METER BASE MOUNTING IN THE ENCLOSURE, ON THE SIDE, OR ON THE BACK OF THE ENCLOSURE. THE UTILITY MAY REQUIRE THE DIMENSION BETWEEN THE DOOR AND THE FRONT OF THE SAFETY SOCKET BOX TO BE LESS THAN THE 11 INCHES SHOWN IN THE LEFT SIDE. SAFETY SOCKET BOX MOUNTING DETAIL, SEE STD. PLAN J-3b. THE CONTRACTOR SHALL VERIFY THE SERVING UTILITY'S REQUIREMENTS PRIOR TO FABRICATION OF AND INSTALLING THE SERVICE EQUIPMENT.
 - THE DIMENSIONS SHOWN ARE MINIMUM AND SHALL BE ADJUSTED TO ACCOMMODATE THE VARIOUS SIZES OF EQUIPMENT INSTALLED.
 - ALL BUSSWORK SHALL BE HIGH GRADE COPPER AND SHALL EQUAL OR EXCEED THE MAIN BREAKER RATING. ALL BREAKERS SHALL BOLT ONTO THE BUSSWORK. JUMPERING OF BREAKERS SHALL NOT BE ALLOWED. BUSSWORK SHALL ACCOMMODATE ALL FUTURE EQUIPMENT AS SHOWN IN THE BREAKER SCHEDULE.
 - THE PHOTOCELL UNIT SHALL BE CENTERED IN THE PHOTOCELL ENCLOSURE TO PERMIT 360 DEGREE ROTATION OF THE PHOTOCELL WITHOUT REMOVAL OF THE PHOTOCELL UNIT OR THE PHOTOCELL ENCLOSURE.
 - ALL INTERNAL WIRE RUNS SHALL BE IDENTIFIED WITH "TO - FROM" CODED TAGS LABELED WITH THE CODE LETTERS AND/OR NUMBERS SHOWN ON THE SCHEDULES. APPROVED PVC OR POLYOLEFIN WIRE MARKING SLEEVES SHALL BE USED.
 - ALL NUTS, BOLTS, AND WASHERS USED FOR MOUNTING PHOTOCELL ENCLOSURE SHALL BE STAINLESS STEEL.
 - A 1% TOLERANCE IS ALLOWED FOR ALL DIMENSIONS.
 - SEE PLANS FOR BREAKER SCHEDULE.
 - INSTALL CONDUIT COUPLINGS ON ALL CONDUITS. PLACE COUPLINGS FLUSH WITH TOP OF CONCRETE FOUNDATION.
 - SEAL CABINET TO FOUNDATION WITH A 1/2" BEAD OF SILICONE. APPLY SILICONE TO DRY SURFACE ONLY.
 - THE METER BASE PORTION OF THIS SERVICE WAS DESIGNED TO MEET METERING PORTION OF EUSERC DRAWING 309 REQUIREMENTS.

GENERAL NOTES

200 AMP TYPE 240/480 1ø SERVICE CABINET

- SEE STD. SPECIFICATION 9-29.24, SERVICE CABINETS.
- HINGES SHALL HAVE STAINLESS STEEL OR BRASS PINS.
- CABINETS SHALL BE RATED NEMA 3R AND SHALL INCLUDE TWO RAIN TIGHT VENTS.
- METERING EQUIPMENT DOORS SHALL BE PAD LOCKABLE. EACH DOOR SHALL BE GASKETED. INSTALL BEST CX CONSTRUCTION CORE ON BOTTOM LEFT AND RIGHT DOORS. SEE DOOR HINGE DETAIL, STD. PLAN J-3b; CONCEALED HEAVY DUTY STAINLESS STEEL LIFT OFF HINGES ARE ALLOWED AS AN ALTERNATIVE. UPPER LEFT DOOR SHALL HAVE 3 HINGES, LOWER LEFT DOOR SHALL HAVE 2 HINGES, AND RIGHT DOOR SHALL HAVE 3 HINGES. LOWER DOOR SHALL HAVE A TWO POSITION DOOR STOP ASSEMBLY.



EXPIRES MAY 5, 2005

SERVICE CABINET TYPE E (0 - 200 AMP TYPE 240/480 SINGLE PHASE) STANDARD PLAN J-3d

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Harold J. Peterfeso 11-05-03

STATE DESIGN ENGINEER DATE

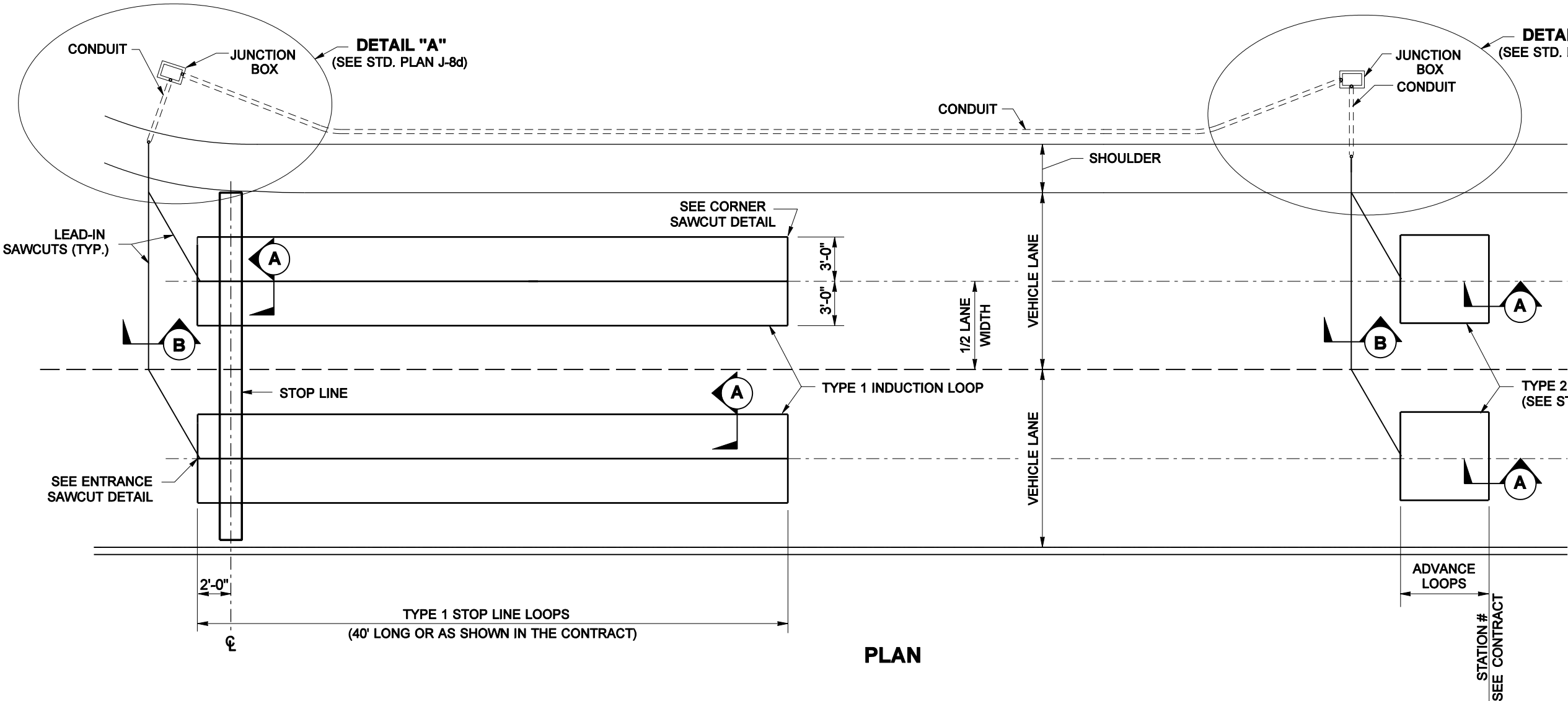


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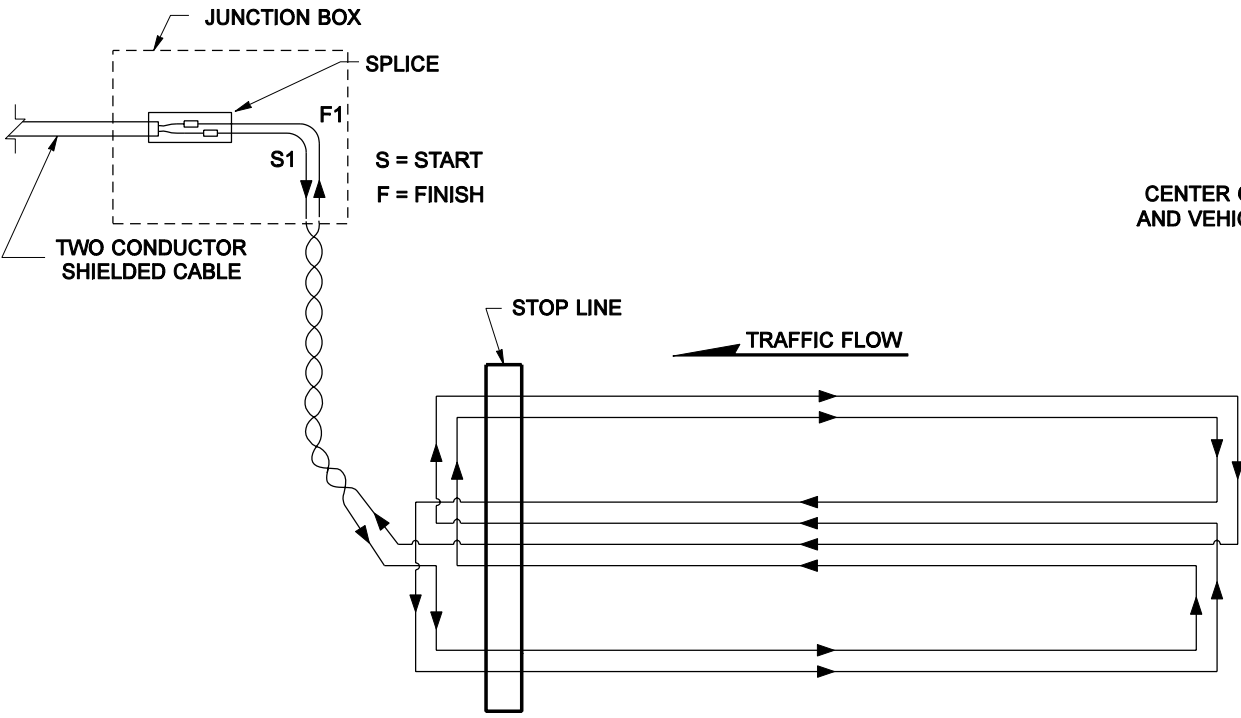
09/2003	REVISED KEY NOTE 16	MHG
DATE	REVISION	BY

DRAWN BY: MONIQUE GLICK

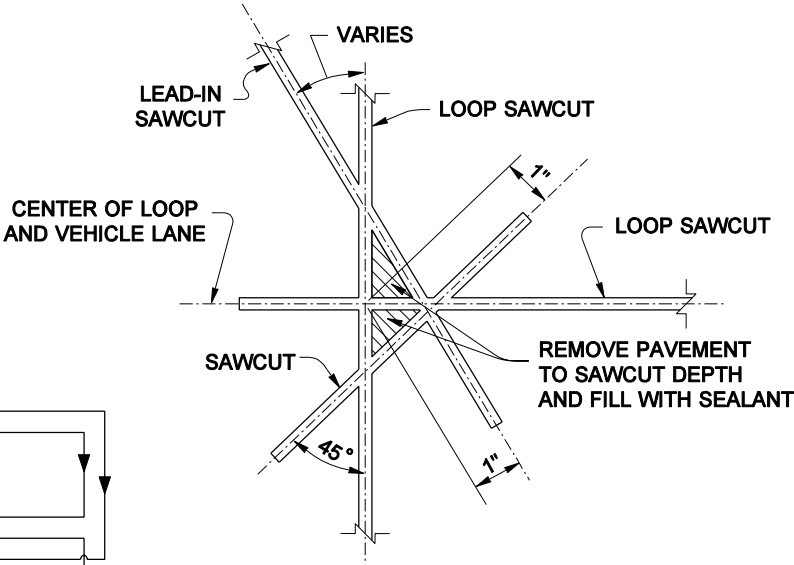


NOTE
1. For Sections A and B, see Standard Plan J-8d.

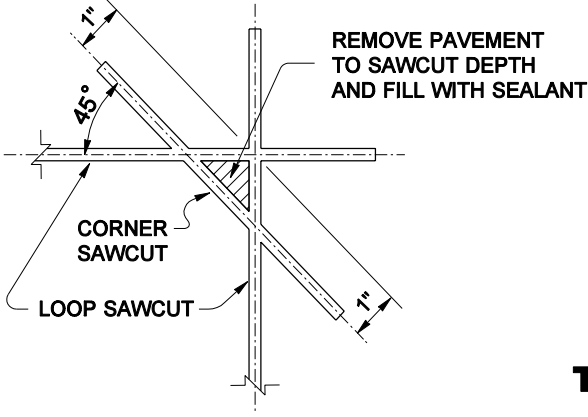
PLAN



TYPE 1 STOP LINE LOOP WIRING DIAGRAM



ENTRANCE SAWCUT DETAIL



CORNER SAWCUT DETAIL



TYPE 1 INDUCTION LOOP

STANDARD PLAN J-8a

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Harold J. Peterfeso 05-20-04

STATE DESIGN ENGINEER

DATE

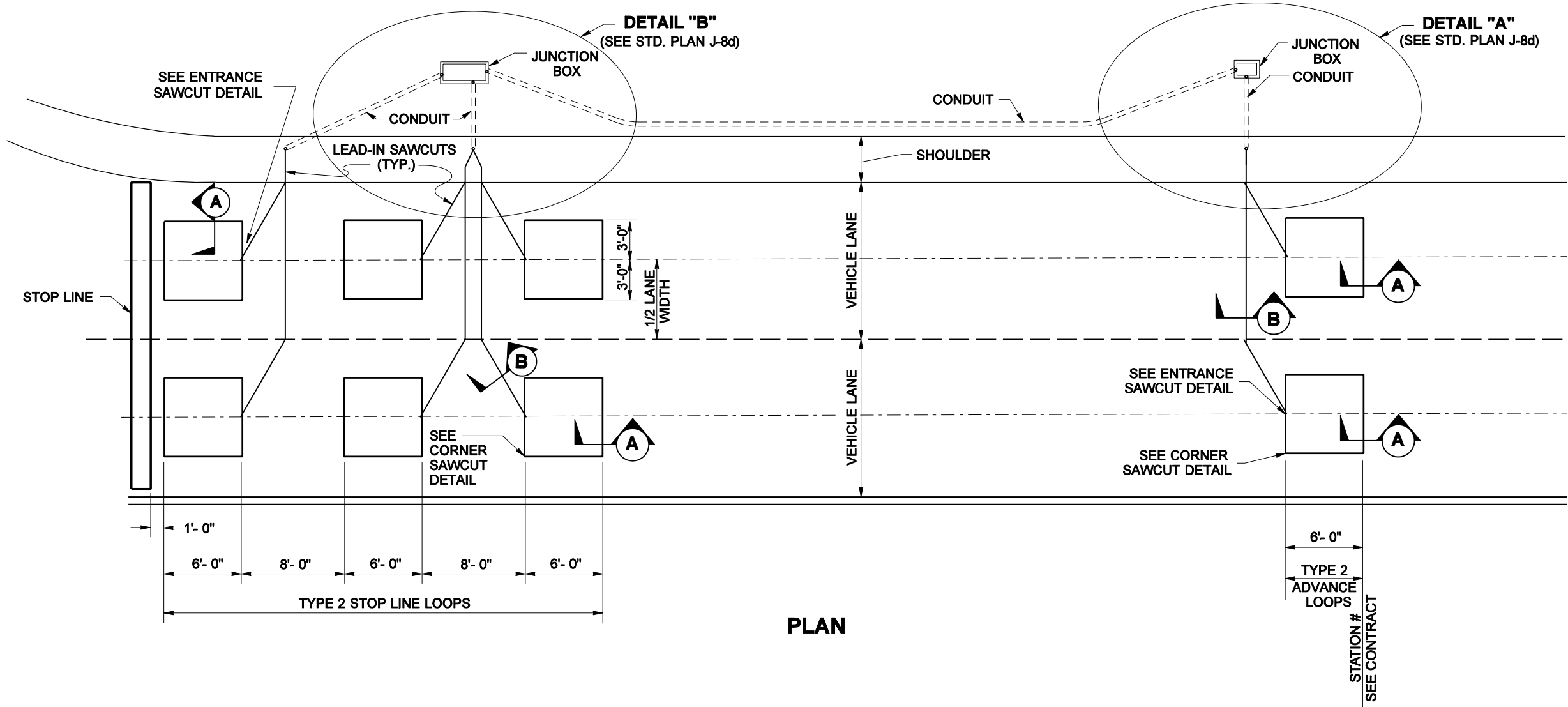


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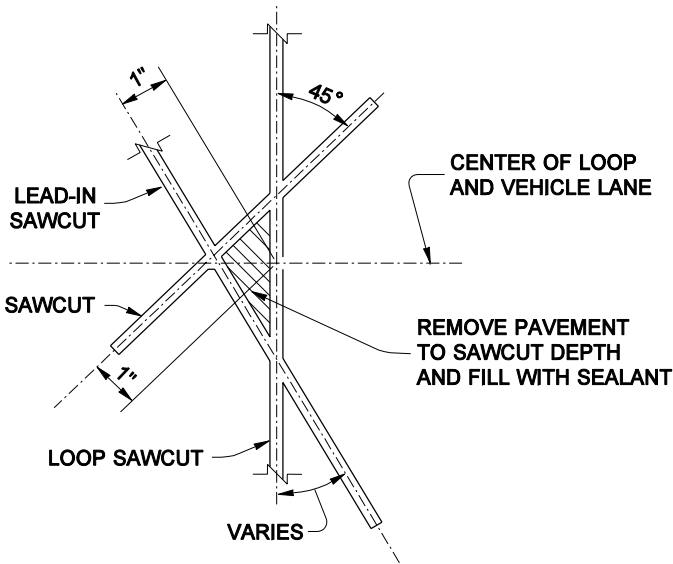
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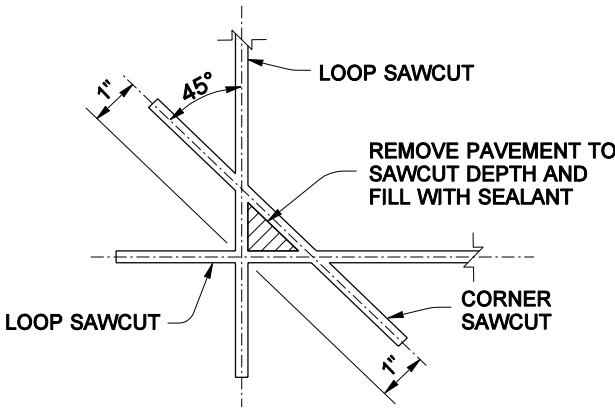
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PLAN



ENTRANCE SAWCUT DETAIL



CORNER SAWCUT DETAIL

NOTE

1. For Sections A and B, see Standard Plan J-8d.



EXPIRES MAY 5, 2005

TYPE 2 INDUCTION LOOP

STANDARD PLAN J-8b

SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION

Harold J. Peterfeso

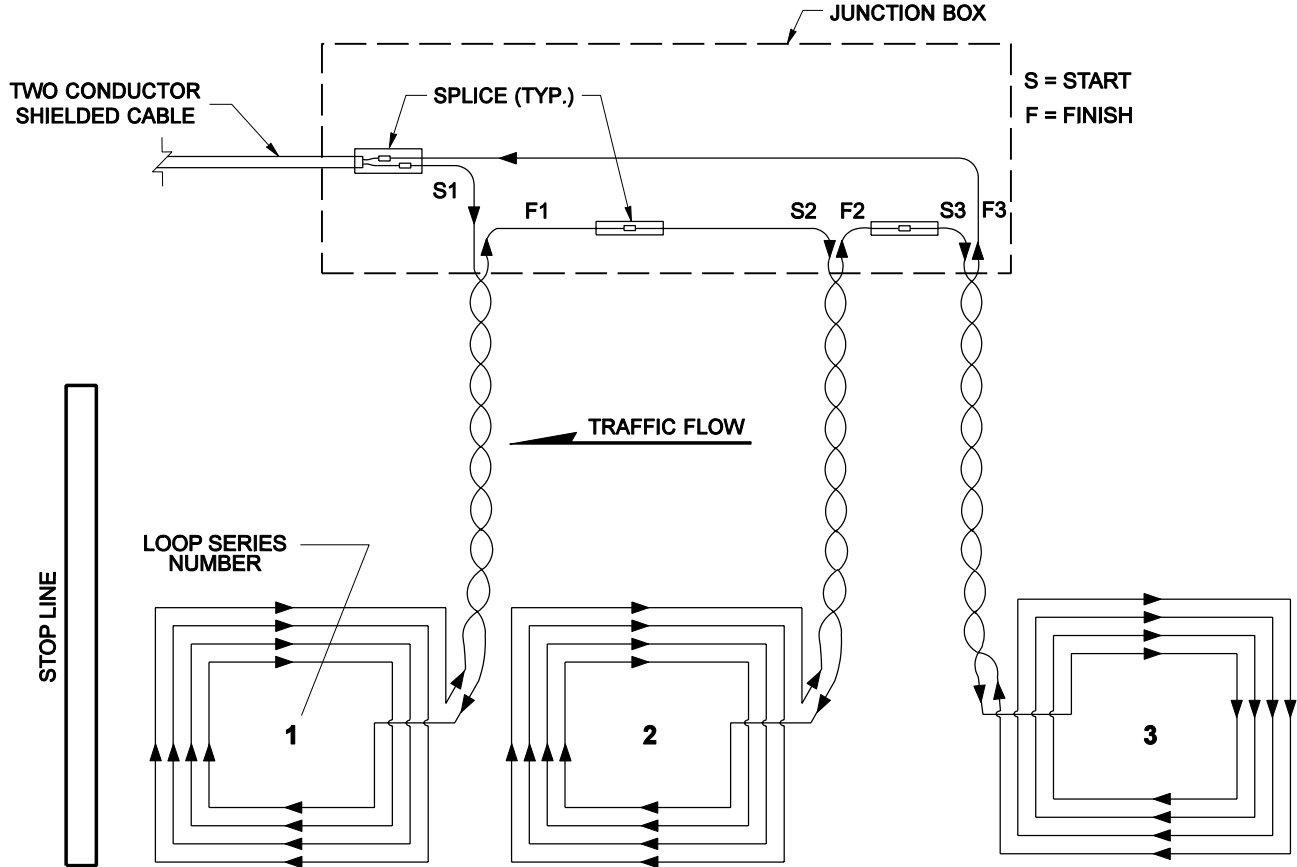
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STATE DESIGN ENGINEER

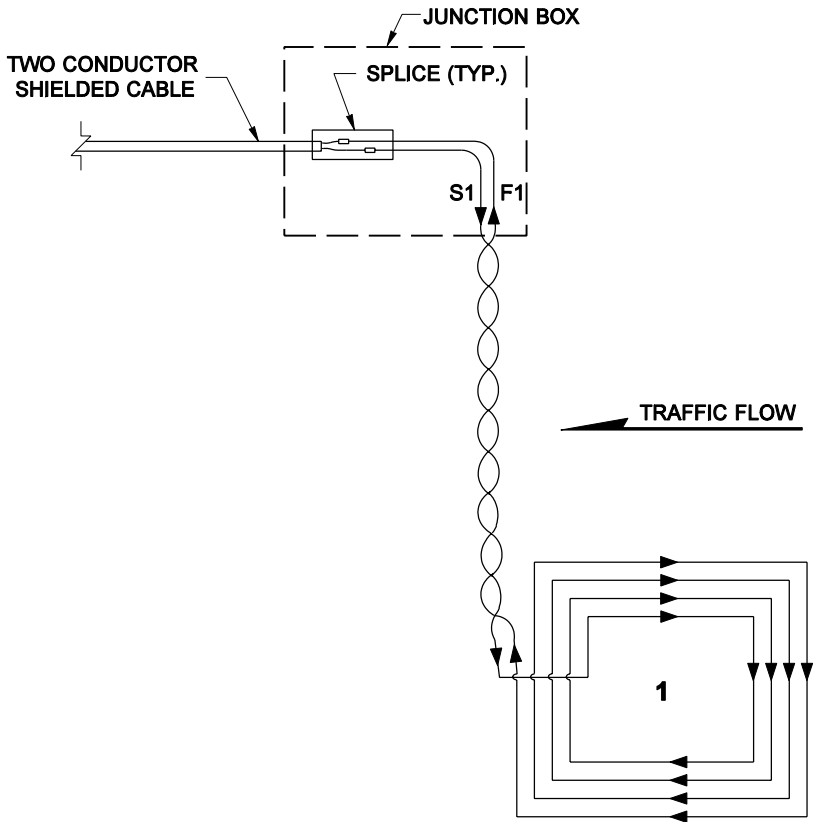
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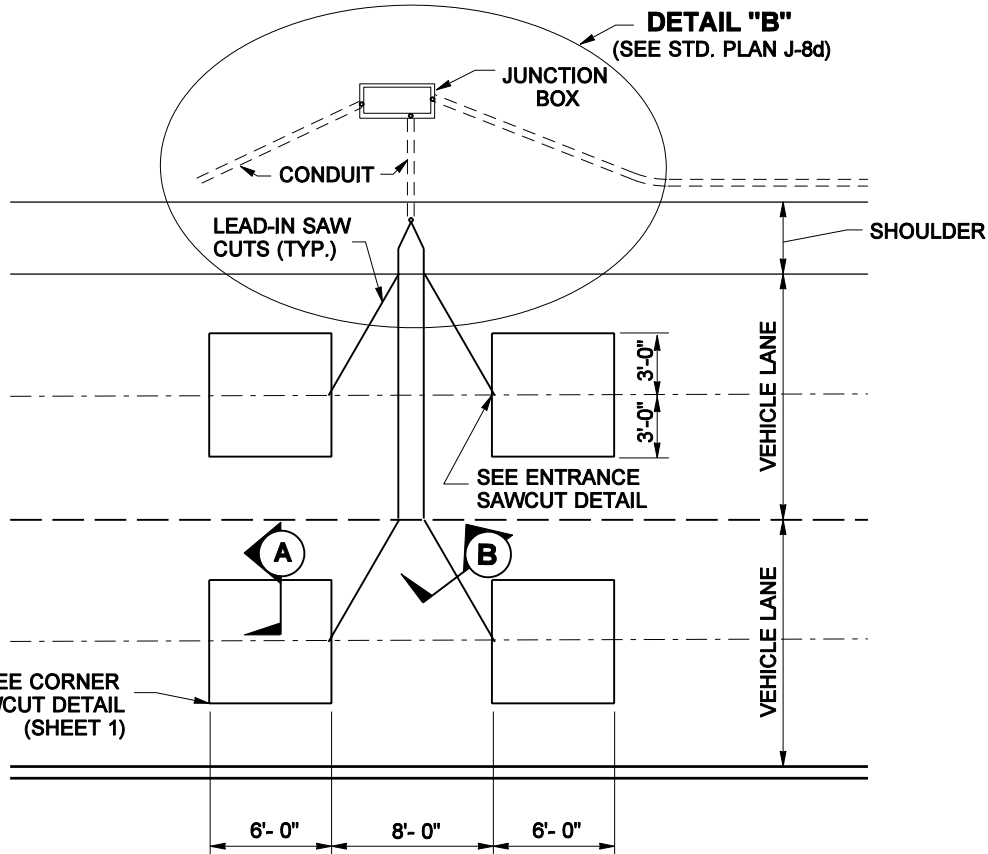
TYPE 2 STOP LINE LOOP WIRING DIAGRAM
(SERIES SPLICE SHOWN)



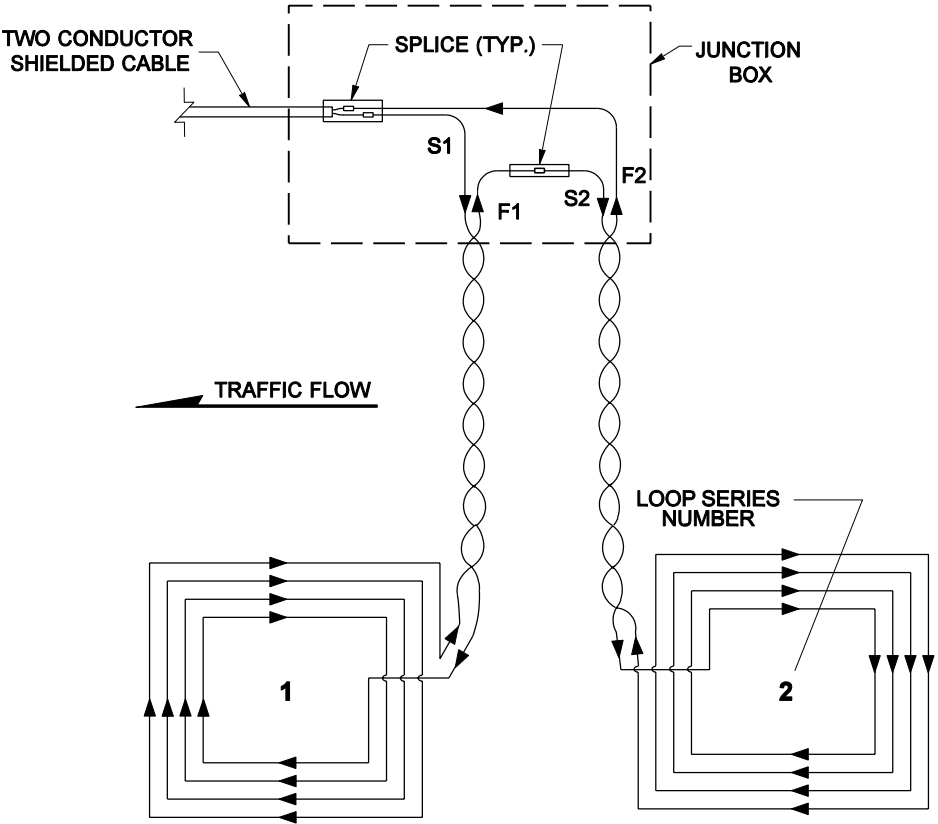
TYPE 2 ADVANCE LOOP WIRING DIAGRAM

NOTES

1. All of the loop lead-in wires shall return to the Junction Box.
2. For Splice Detail, see Standard Plan J-8d.



TYPE 2 SAMPLING LOOPS



TYPE 2 SAMPLING LOOP WIRING DIAGRAM
(SERIES SPLICE SHOWN)



EXPIRES MAY 5, 2005

TYPE 2 INDUCTION LOOP

STANDARD PLAN J-8b

SHEET 2 OF 2 SHEETS

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05-20-04

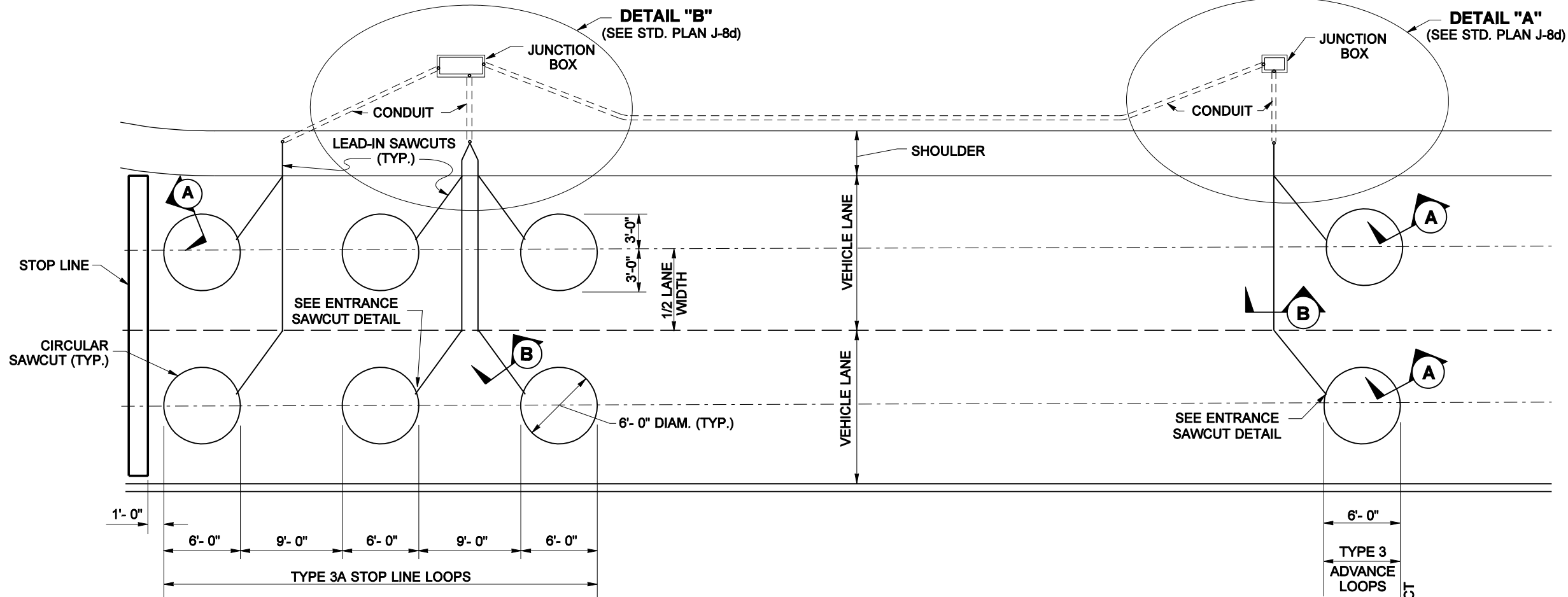
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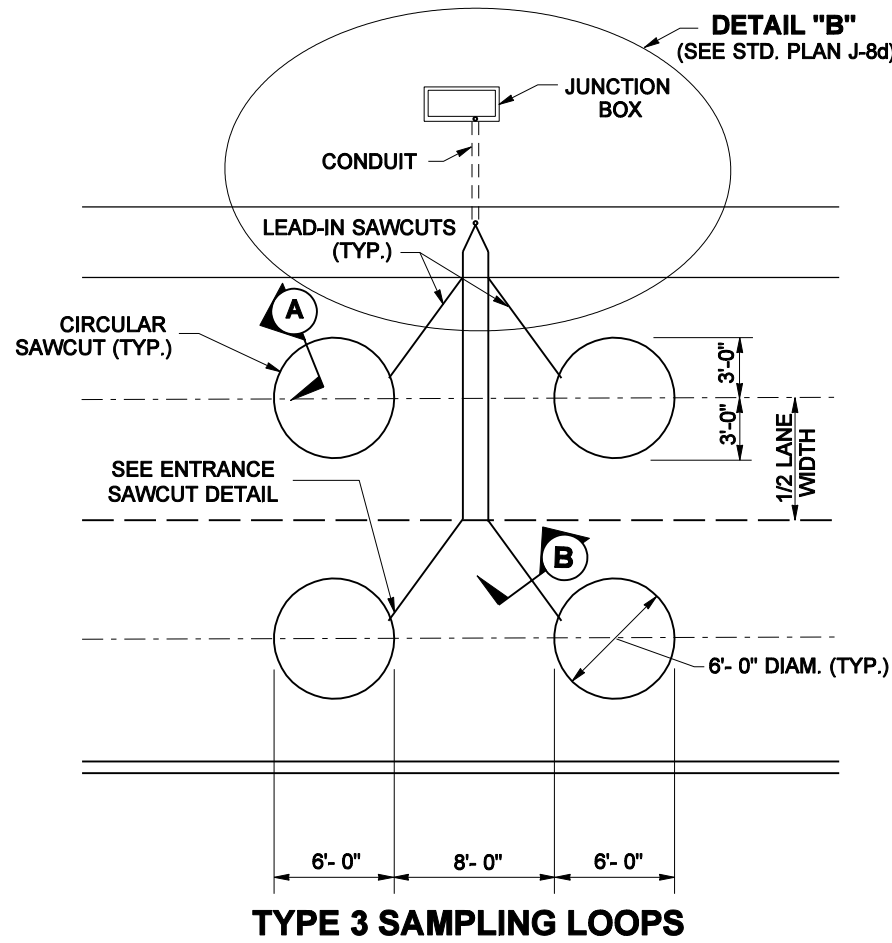
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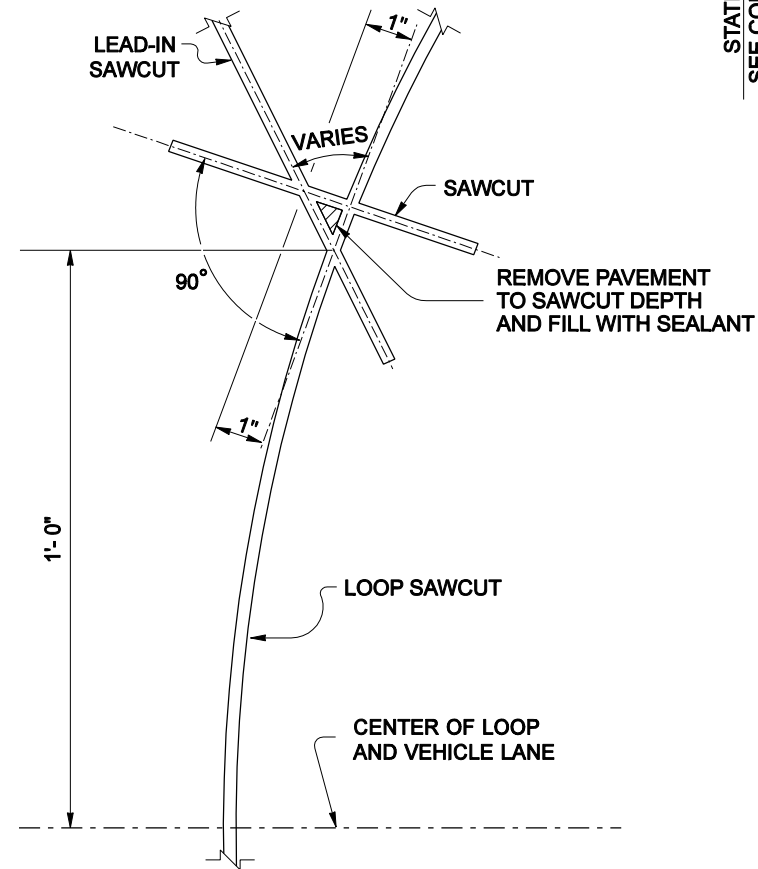


PLAN

NOTE
1. For Sections A and B, see Standard Plan J-8d.



TYPE 3 SAMPLING LOOPS



ENTRANCE SAWCUT DETAIL



EXPIRES MAY 5, 2005

TYPE 3 INDUCTION LOOP

STANDARD PLAN J-8c

SHEET 1 OF 3 SHEETS

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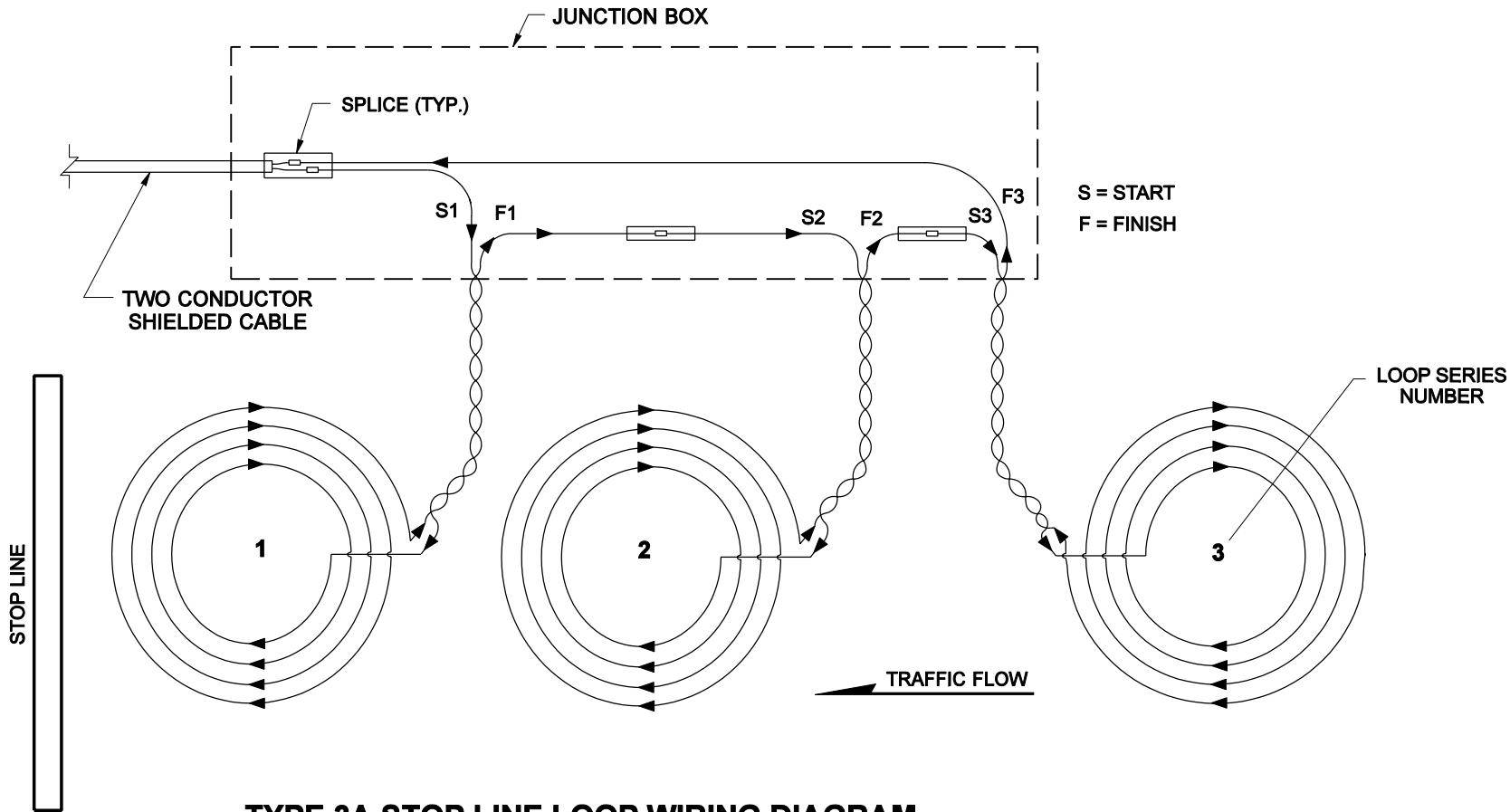
Harold J. Peterfeso 05-20-04

STATE DESIGN ENGINEER

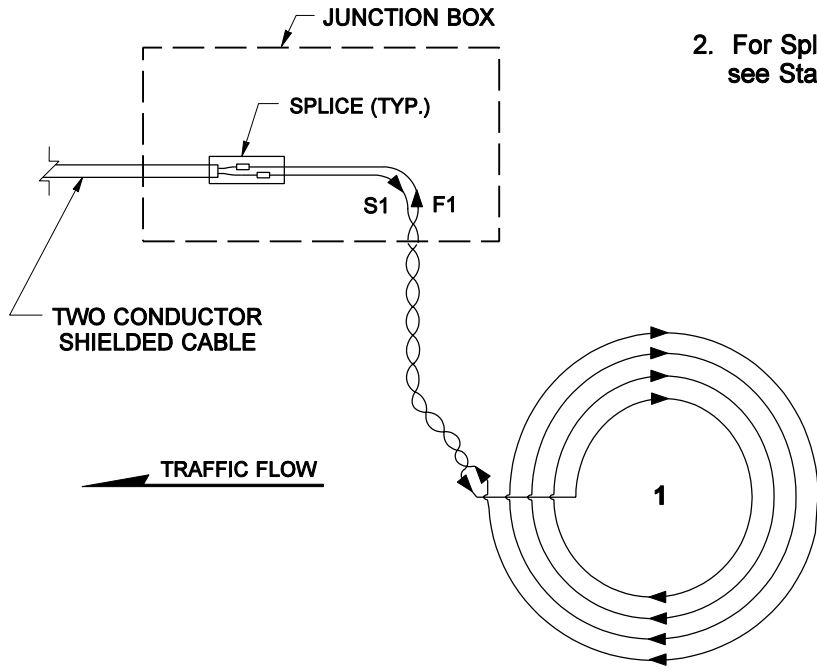
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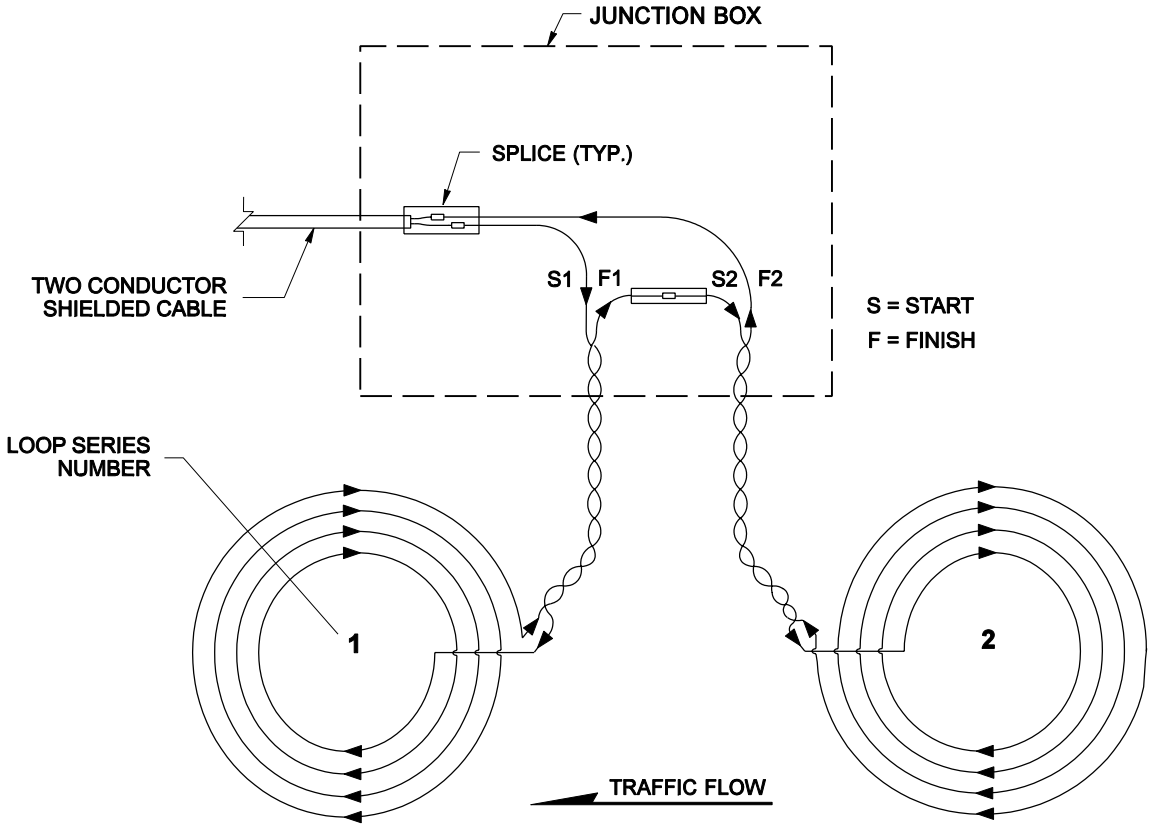
TYPE 3A STOP LINE LOOP WIRING DIAGRAM
(SERIES SPLICE SHOWN)



**TYPE 3 ADVANCE
LOOP WIRING DIAGRAM**

NOTES

1. All of the loop lead-in wires shall return to the Junction Box.
2. For Splice Detail, see Standard Plan J-8d.



TYPE 3 SAMPLING LOOP WIRING DIAGRAM
(SERIES SPLICE SHOWN)



EXPIRES MAY 5, 2005

TYPE 3 INDUCTION LOOP

STANDARD PLAN J-8c

SHEET 2 OF 3 SHEETS

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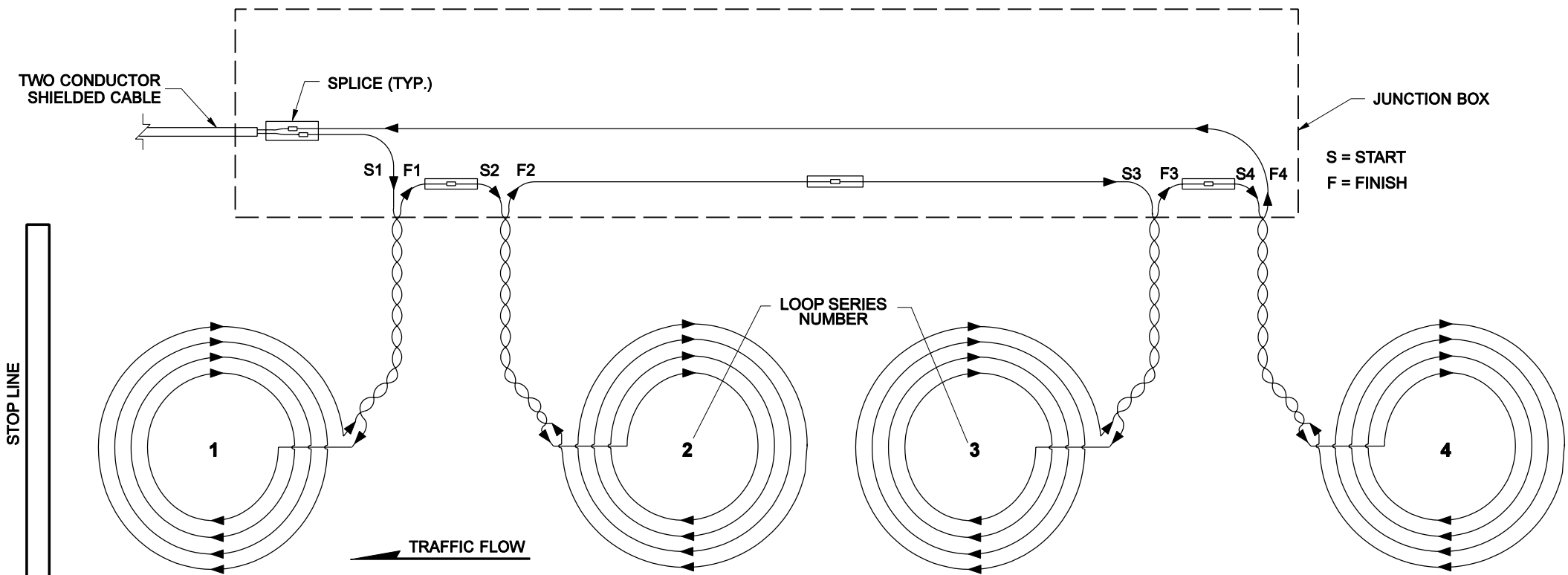
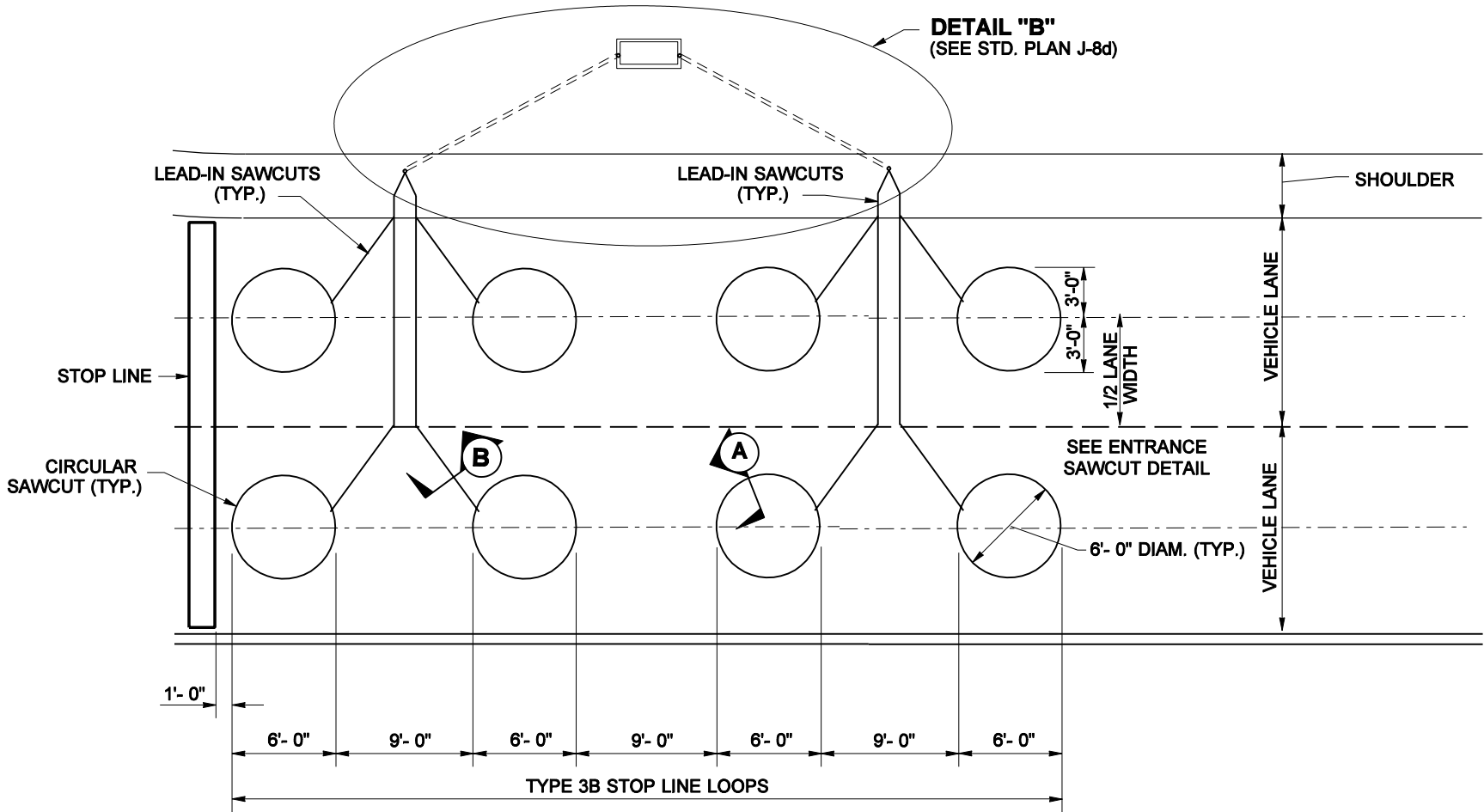
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TYPE 3 INDUCTION LOOP

STANDARD PLAN J-8c

SHEET 3 OF 3 SHEETS

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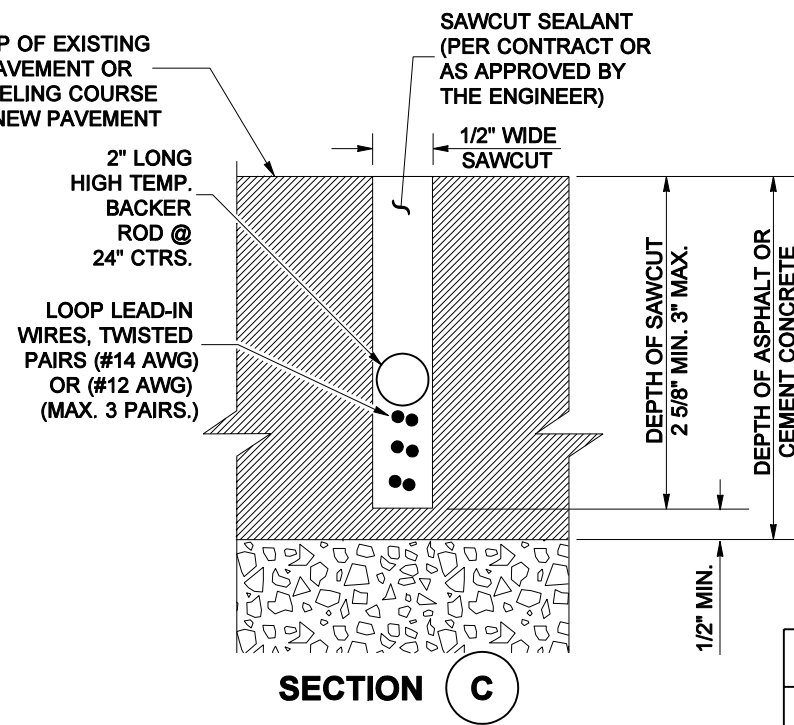
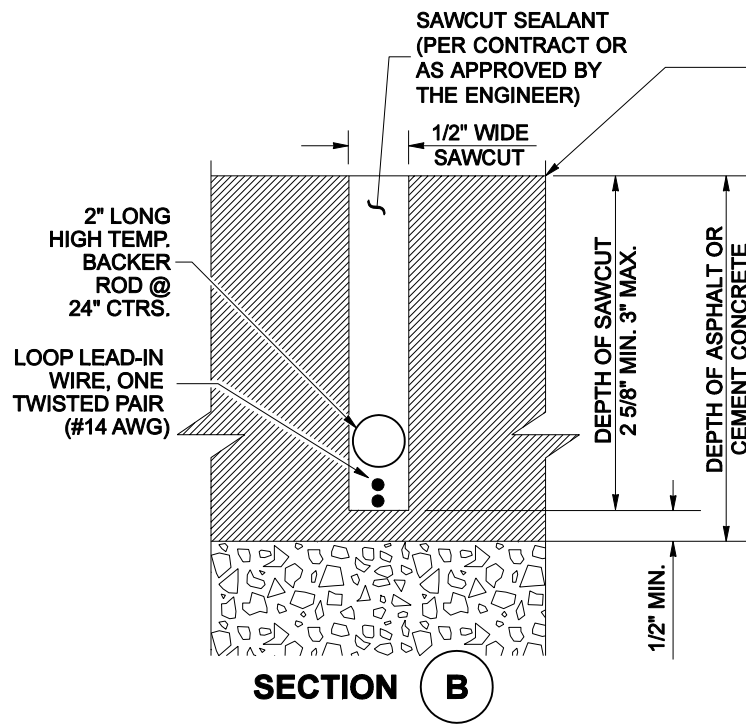
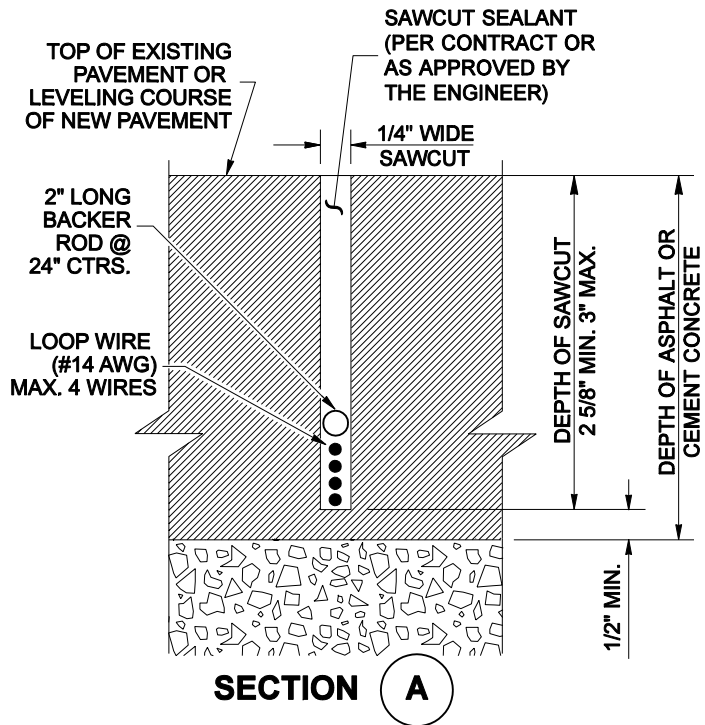
STATE DESIGN ENGINEER

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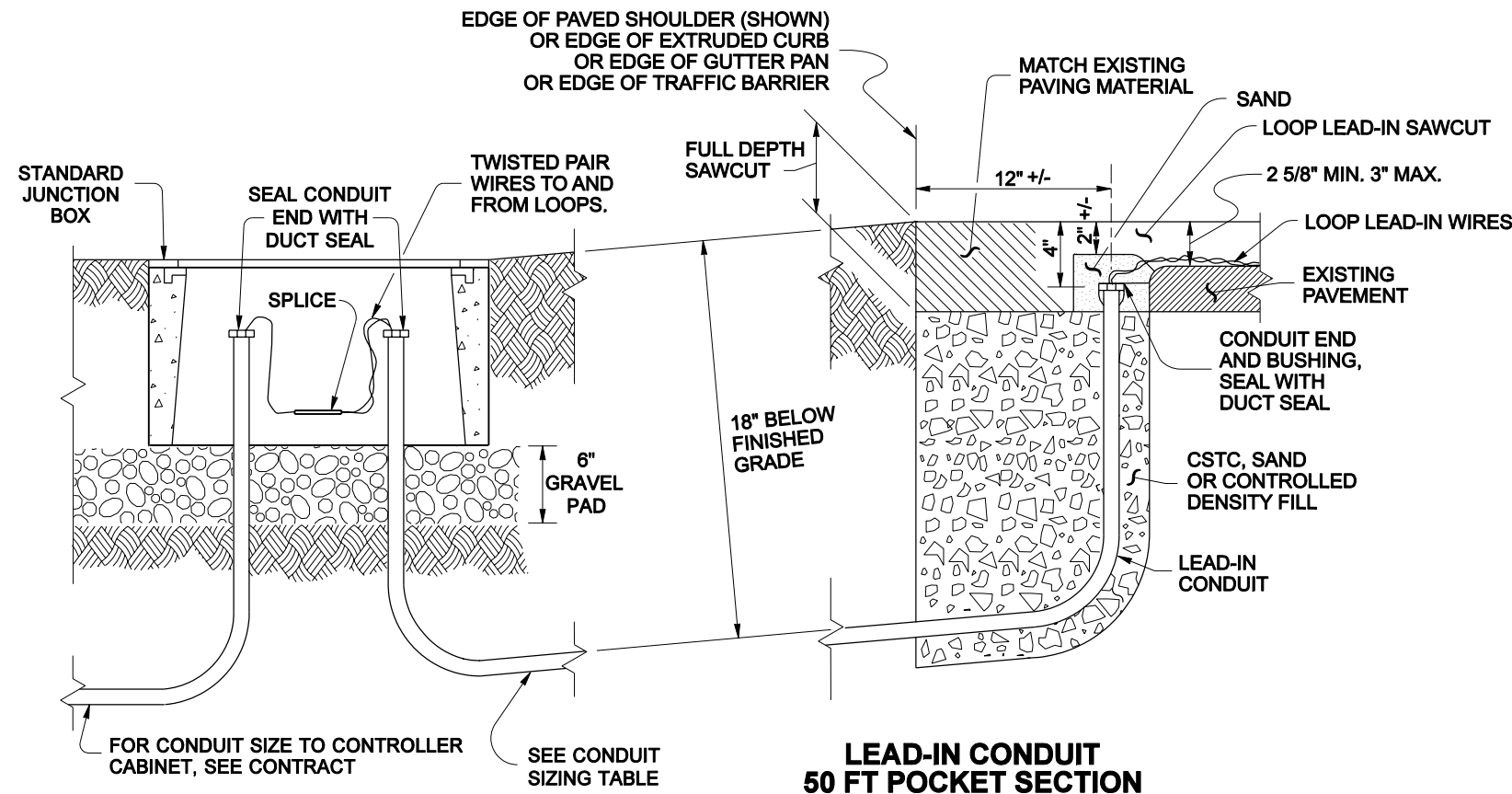


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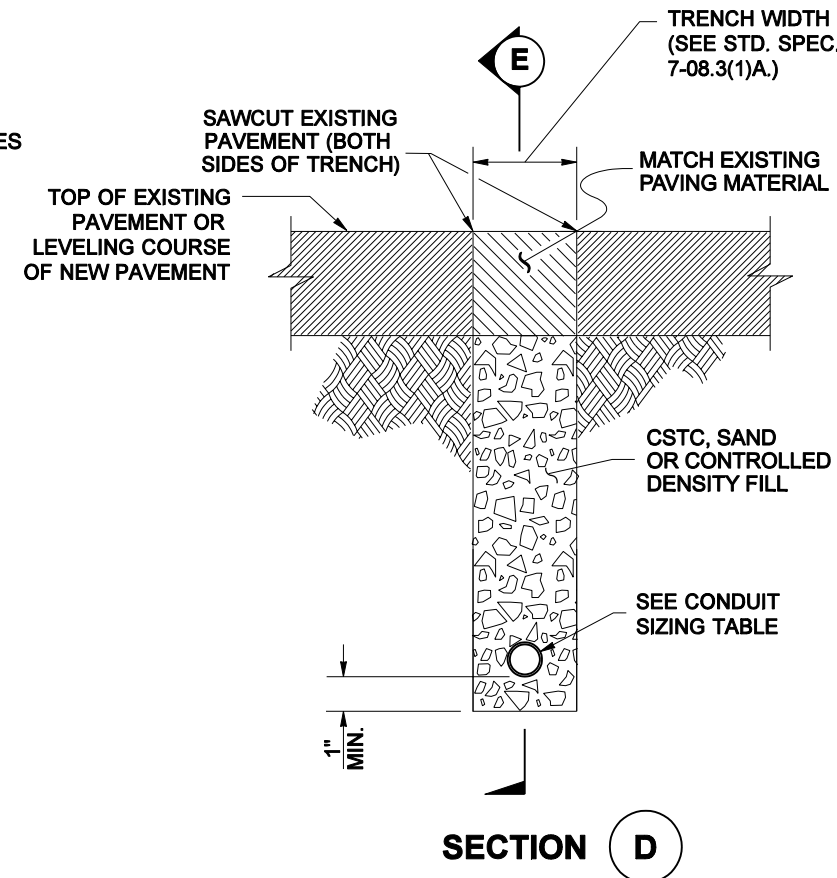
1. Fill the conduit trench to the top of the existing or new surfacing with CSTC, sand or controlled density fill. See "Standard Specifications" Section 2-09.3(1)E.
2. Minor Regional variation is allowed in the soft pocket closure. Consult with the Engineer or see the Contract for additional requirements.
3. Conductors shall be snug to the bottom of the sawcut. High temperature backer rod shall be snug to the conductors.

CONDUIT SIZING TABLE

LOOP LEAD PAIRS	1-2	3	4-5	6-8	9-12
CONDUIT SIZE (MIN)	1"	1 1/4"	1 1/2"	2"	3"



SECTION E



EXPIRES MAY 5, 2005

INDUCTION LOOP DETAILS

STANDARD PLAN J-8d

SHEET 1 OF 2 SHEETS

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STATE DESIGN ENGINEER

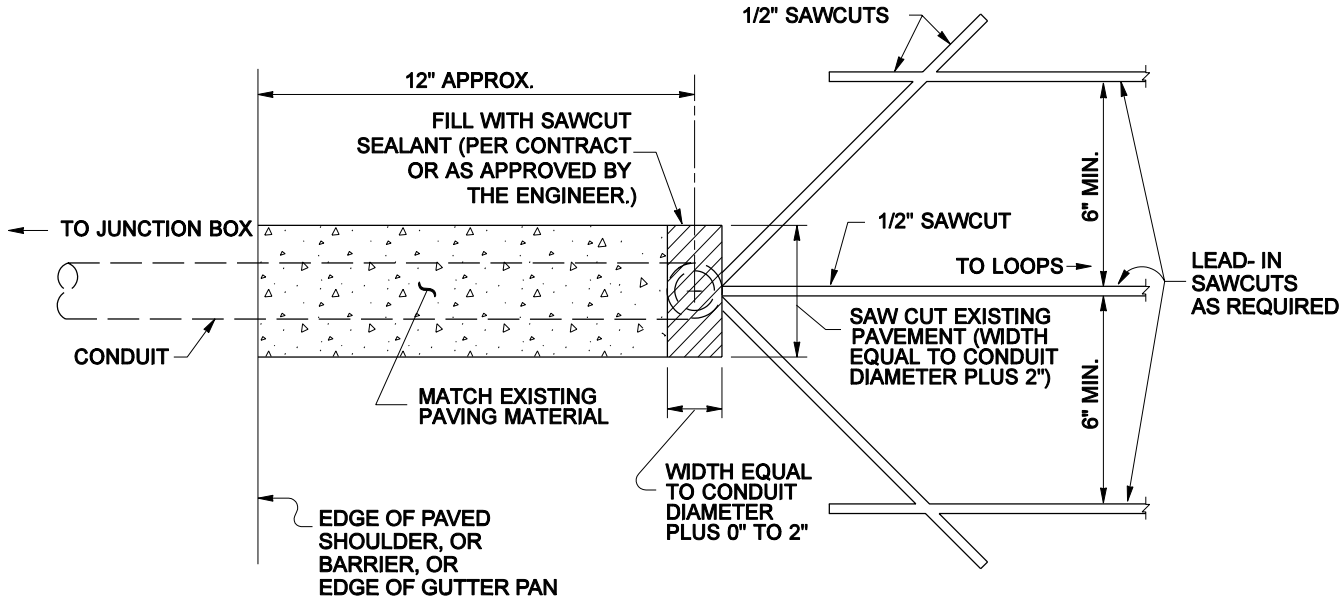
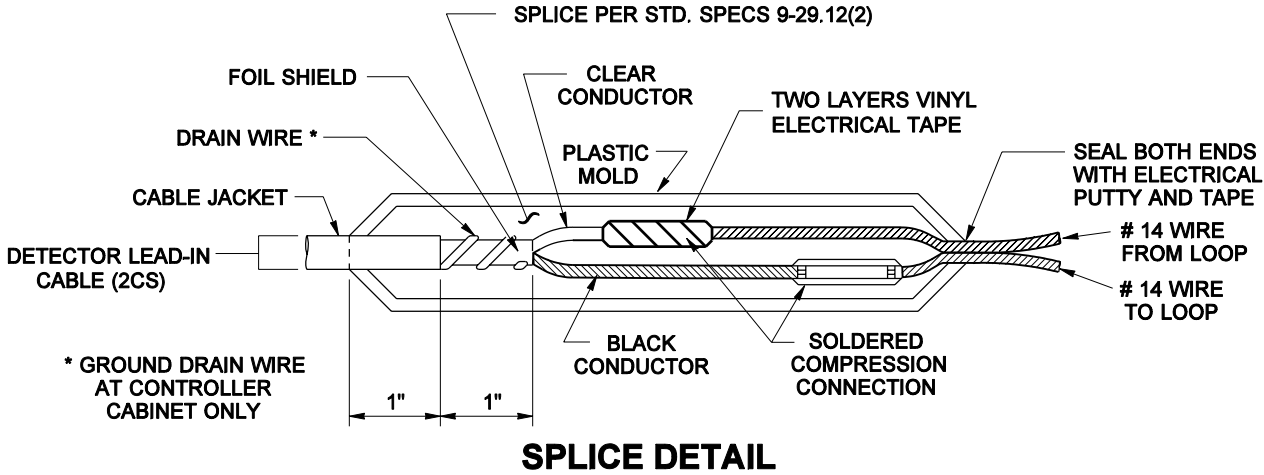
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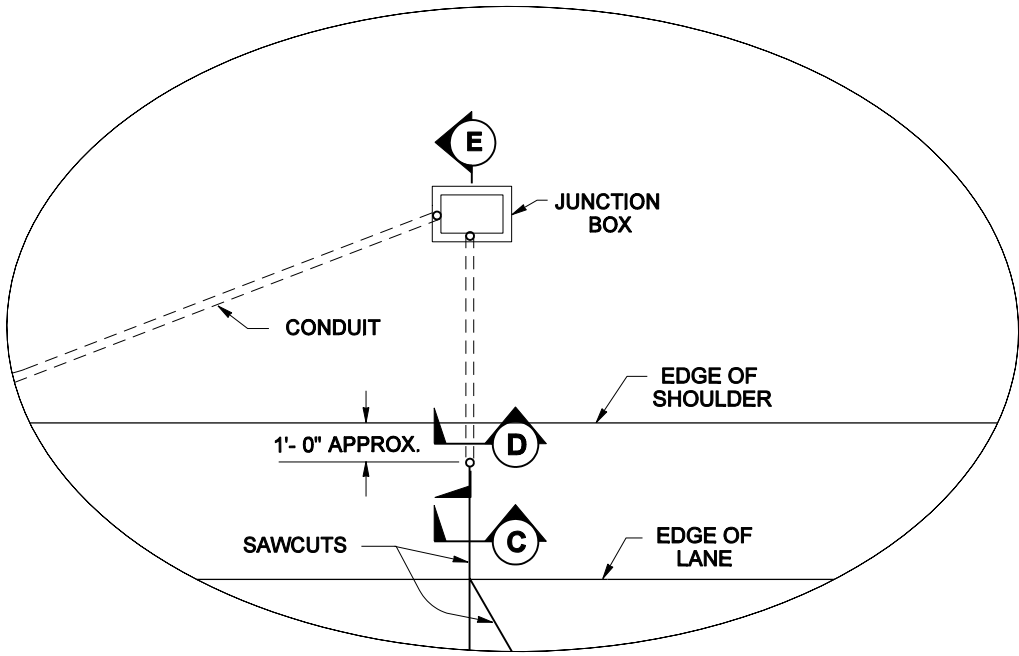
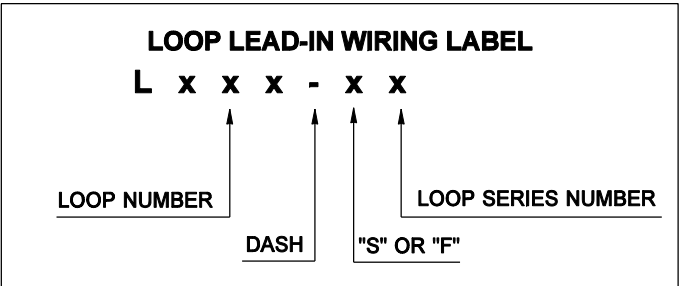
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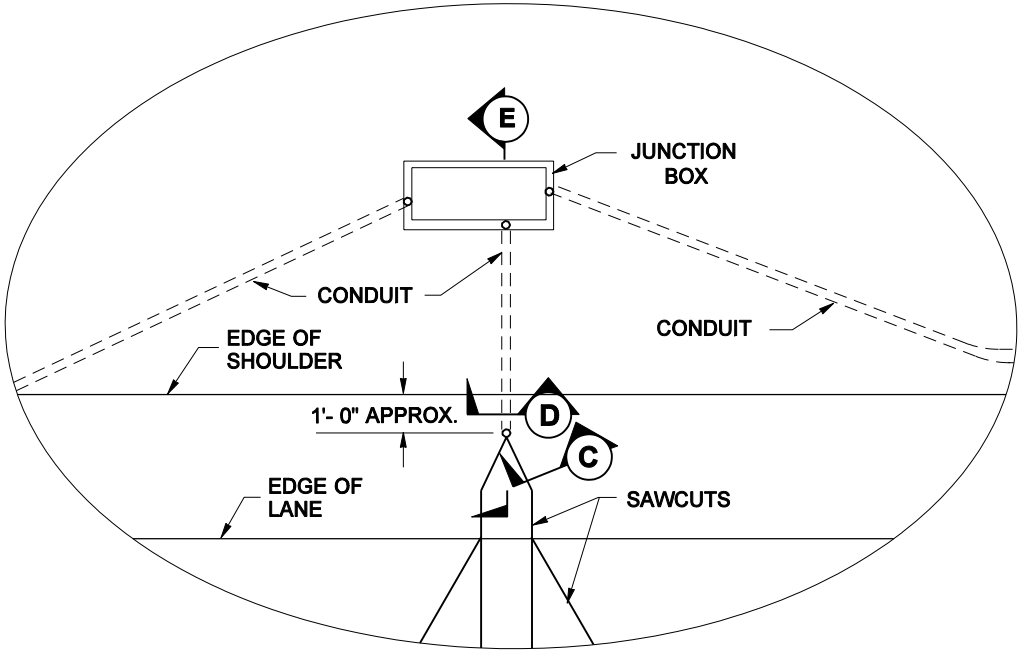
DRAWN BY: MONIQUE GLICK



**SAWCUT AND CONDUIT CONNECTION
PLAN**



DETAIL "A"



DETAIL "B"

LOOP INSTALLATION NOTES

1. Install the Junction Box and the lead-in conduit.
2. Sawcut the loop slots and the lead-in slots.
3. Lay out the loop wire starting at the Junction Box, allowing 5' minimum slack.
4. Install the wire in the loop slot as shown.
5. Finish laying out the wire at the Junction Box and identify the leads with the loop number, the "S" for start and the "F" for the finish, and the loop series number.
6. Twist each pair of the lead wires two times per foot from the loop to the Junction Box. Reverse the direction of the twist for each successive pair installed.
7. Construct a supplemental splice containing any series loop connections required in the plans. Supplemental splices are subject to the same requirements shown for the loop lead and the shielded cable splice.
8. Splice the loop leads of supplemental splice leads to the shielded cable as noted in the Contract.
9. Complete installation and test loop circuits or combination loop circuits. See Standard Specifications 8-20.3(14)D.
10. Conduit for the loop stubout shall be as required in the Contract.



EXPIRES MAY 5, 2005

**INDUCTION LOOP
DETAILS**

STANDARD PLAN J-8d

SHEET 2 OF 2 SHEETS

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